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MUNICIPAL JOURNAL AND ENGINEER

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SPECIAL NOTICE

In the respective following issues of the Municipal Journal and Engineer considerable space will be devoted specially to the subjects as indicated:

- 1906—
- July 4th - - - - - WATER
- August 1st - - - - - SANITATION
—Smoke Prevention, Street Sprinkling and Cleaning
- September 5th - - - - - THE CITY BEAUTIFUL
—Parks, Monuments, etc.
- October 3d - - - - - FIRE AND POLICE
- November 7th - - - - - LIGHTING
—Gas, Electricity, Etc.
- December 5th - - - - - BRIDGES

MUNICIPAL JOURNAL AND ENGINEER

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AND ENGINEER, either in the form of special articles or of letters
discussing matters of current interest.

It is also desired that the facilities furnished by the reference
library in this office should be widely known and freely used by
those interested in municipal affairs. Visitors will be welcomed
and provided with conveniences for search, and inquiries by mail
will be promptly dealt with.

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Mutual Fire Protection

A NOVEL plan for protection from fire has been evolved by some of the bright people in Pennsylvania, which should be of interest to city and town officials in other parts of the country, and particularly to members of the Fire Department. It is nothing more nor less than the formation of an alliance by the fire companies in Delaware county; the division of the territory into districts; and the installation of a fire alarm system to cover the entire county. Certain companies, it is planned, shall respond to alarms in allotted districts, each of which will comprise several communities. The Darby Township Company of Darby initiated the movement which has been taken up by the companies in ten or fifteen other boroughs and towns, and the prospects are bright for an effective organization at an early date. The installation of an up-to-

date fire alarm system will be followed with as little delay as possible, by the securing of more modern apparatus and the adoption of means for transporting the pieces and for fighting fires. Among the companies co-operating with the Darby Company are those of Eddystone, Lansdowne, Media, Norwood, Clifton Heights, Yeadon, Fernwood, Glenolden, Colwyn, Ridley Park, Prospect Park and Sharon Hill. Is not an alliance of this kind a good one, and one which is sure to redound to the benefit of all concerned? It is not unusual for the Departments in large cities to co-operate in case of a huge conflagration. Such was the case in Baltimore, when men and apparatus were sent from Philadelphia, Washington, New York and other places, and in divers cities before and since that time. Would it not be well for other cities and towns in close proximity to each other to unite for self-protection? There is no doubt such a combine would result in the lowering of insurance rates, and it surely would do much for the satisfaction and prosperity of citizens in the towns concerned. These, and other considerations, should result in early action along similar lines by communities elsewhere. The good people in the State of William Penn, we are sure, will not object to their ideas being copied.

Major Gillette and His Office

MAJOR CASSIUS E. GILLETTE, Chief Engineer of the Philadelphia Bureau of Filtration, has been the real head of that branch of the city's work since the resignation of John W. Hill, under circumstances still fresh in the public memory. He has been the active agent in exposing the corruption with which the waterworks contracts, involving an expenditure of many millions, were conceived and carried on. In order to undertake the investigation whose results have been widely disclosed, leave of absence had to be obtained from the War Department, and it had been hoped that this could have been extended so as to leave Major Gillette at liberty for the more permanent work without placing him under the necessity of withdrawing from the army. Many sinister suggestions have been made in regard to the influences through which this natural aspiration on his part, and the earnest desires of the city, were thwarted. The choice had to be made, and the city gained by his decision. Major Gillette, previous to his connection with the Quaker City, had already earned a reputation for investigation work, having been mainly instrumental in formulating the charges against Captain Carter in connection with frauds on the United States Government in the construction of harbor works at Savannah, Ga.

Brevities

AKRON, OHIO, secures 30-cent gas by granting a franchise to the Akron Gas Company, giving it the right to supply the natural product, through the Mohican Oil and Gas Company, for ten years.

BALTIMORE, MD., Council has, after a long and spirited controversy, passed an amended ordinance taking from Councilmen the right to select the kind of paving to be used in their wards and placing the power in the hands of the Board of Awards.

COLUMBUS, OHIO, Board of Public Service and Superintendent Reid of the municipal light plant recently received copies of a report made by Ohio State University students and Professors Hitchcock and Caldwell, of an investigation, which shows that while the plant is well equipped, it is much overcrowded. Extra equipment must be secured or about 500 lights will have to be shut off to guard against overworking the machinery.

LOUISVILLE, Ky., will have its principal streets as well as a number of unimproved streets sprinkled by the Louisville Railway Company, arrangements having been perfected by Mayor Barth with the railway officials whereby the company was to furnish three sprinkling cars and pay the motormen for five months, June to November, at a total expense to the city of \$3,200.

LOWELL, MASS., by a contract signed by Mayor Casey and Chief Hosmer, secures arc lamps in the suburban districts for \$100, instead of \$120.25, for two years, which nets a saving of \$6,402. The price on the expiration of the contract will be determined by the Gas and Electric Light Commissioners.

LYNN, MASS., Council has adopted an amendment to the ordinances providing that water rates be collected by the tax collector and paid in to the Treasurer, instead of having the funds collected and handled by the Water Department.

NEWPORT, R. I., citizens have approved the proposed new charter, the vote being 1,737 to 1,162. The new form of government provides for a representative body of 195 citizens as the governing body, with a Mayor and five Aldermen as the executive body.

NORRISTOWN, PA., police, following a decision of the Montgomery County Court that the local authorities have a right to remove signs overhanging the sidewalks, made a clean sweep of all the business signs of the city.

OWENSBORO, Ky., is to have a new \$200,000 deep-well waterworks system in operation shortly. Twenty-one wells have been dug to a depth of 375 feet; two large reservoirs have been built and a strong pressure secured. An effort to compel the old water company to remove its pipes from the streets must be settled in court, the company contending that its charter is still in force.

PHILADELPHIA, PA., Council is considering a bill introduced by Councilman Frank H. Massey, appropriating \$1,000,000 to the Mayor to be used in the purchase of property to build the parkway from Logan Square to Twenty-fifth and Spring Garden streets.

PITTSBURG, PA., voted by over 25,000 majority for consolidation with Allegheny into a Greater Pittsburgh, while

Allegheny voted about 5,600 against the proposition, every ward in the smaller city being opposed. The constitutionality of the Legislative act authorizing consolidation will now be passed on by the State Supreme Court.

PITTSSTON, PA., officials are withholding their signatures from an electric-light contract until the company inserts an agreement to light the City Hall and fire houses free.

SAN FRANCISCO, CAL., may build houses for citizens, plans being under consideration to request Congress to furnish \$10,000,000 to finance the scheme.

SPRINGFIELD, OHIO, Board of Public Service is to be investigated, a committee consisting of Judge Walter L. Weaver, Samuel L. Lafferty and George C. Lynch having been appointed for the purpose by Mayor J. M. Todd.

SUPERIOR, WIS., Council has authorized necessary plans to be drawn to secure a municipal lighting plant. No contract will be entered into by Council with the Water, Light and Power Company for street lighting, but will pay for service by the month.

TOLEDO, OHIO, recently experienced trouble at the waterworks pumping station, as a result of which the Chief Engineer, James I. Webb, and his four assistants tendered their resignations in a body to Superintendent Wisler of the Water Department. W. H. Hartford has been appointed Chief Engineer.

WASHINGTON, D. C., has ordered fifty barrels of tar at 60 cents per gallon, to use as an experiment for keeping down dust on dirt streets and roads at the National capital. A. W. Dow, Inspector of Cements and Asphalts for the District of Columbia, Capt. Jay J. Morrow, assistant to the Engineer Commissioner, and Morris Hacker, Superintendent of Roads, will personally conduct the work.

WILMINGTON, DEL., Water Commissioners refuse a permit to the Delaware Water Company to lay pipes to supply water to the Pennsylvania Railroad Company, notwithstanding influential pressure which has been brought into play.

YOUNGSTOWN, OHIO, has an asphalt repair plant, which, under the direction of Serviceman Philip Hagan, it is claimed, saves from 50 to 75 cents a yard.

Some Unusual Fires

BELLEFONTAINE, OHIO.—Freight train on the Big Four burned. Cause, collision of two sections of train that had broken apart, resulting in explosion of car of naphtha. Amount of damage \$100,000.

CHICAGO, ILL.—Frame building, 84 West Fourteenth Place, burned June 9. Cause, sparks from a foundry. Amount of damage, \$1,000.

MADISON, IND.—Twelve residences and other buildings burned June 13. Water supply failed; pressure afterward increased by shutting down factories. Cause unknown. Amount of damage, \$10,000.

MILWAUKEE, WIS.—Third Ward Plant of the Milwaukee Gas Light Company, burned June 9. Cause, explosion in a large blower. Amount of damage, \$5,000.

ST. LOUIS, MO.—Building occupied by Philip Carey Asbestos and Roofing Company, and the Grand Springs Water Company, burned June 17. Cause unknown. Amount of damage, \$55,000.

ST. PAUL, MINN.—Ryan annex building occupied by Palace Clothing Company, burned June 17. Thirty-seven firemen overcome by heat and gas. Cause unknown. Amount of damage, \$500,000.

REINFORCED CONCRETE POLES are used successfully on the transmission line along the Wetland Canal in Canada, where the wires must be carried at extra height.

THE COMMITTEE ON STREETS AND ALLEYS of the Galesburg, Ill., Council, recently appointed, consists of Messrs. O. J. Johnson, P. W. Granville and John Glenny; Sidewalks, Henry Hawkinson, R. N. Hoopes and John Oberg; Sewers, William Ehn, John McDermott and O. J. Johnson; Water, John Oberg, H. H. Griffith and W. H. Maley; Street Lighting, W. H. Maley, William Ehn and R. N. Hoopes; Fire, George Sanderson, G. F. Conley and E. R. Everett; Finance, H. H. Griffith, George Sanderson and E. R. Everett; Public Buildings and Grounds, John McDermott, R. W. Hoopes and A. K. Hardy; Police, G. F. Conley, A. K. Hardy and O. J. Johnson; Special Park Committee, H. H. Griffith, W. H. Maley and P. N. Granville.

THE EXTENSIVE SEWER SYSTEM which undermines Paris, France, in a series of broad canals, is attributed as the cause of the prevailing climatic conditions, according to investigations. The warm air which comes from the sewers in the winter time melts the snow in the streets and keeps up the temperature, while in the summer the same air, which is much cooler than that of the surface, keeps the city streets cooler than those of other cities in the same latitude.

THE HIGHWAY COMMITTEE of the Cambridge, Mass., City Council made a trip, beginning June 13, to New York, to inspect the incinerators for destroying the light waste material collected by the Street Cleaning Department. Those in the party were Aldermen Blanchard, Clary and Andrew, Councilmen Stephens, Dunn and Quinty, Superintendent of Streets Clukas and City Messenger Evans.

THE NATIONAL ELECTRIC LIGHT ASSOCIATION, at the annual convention at Atlantic City, N. J., elected the following officers: President, Arthur Williams, New York; First Vice-President, Dudley Farrand, Newark, N. J.; Second Vice-President, Alexander Daw, Detroit; Secretary and Treasurer, W. C. Leglin, Philadelphia.

THE MUNICIPAL LEAGUE OF INDIANA, in session at Marion recently, re-elected its old officers, selected Logansport as the next meeting place and appointed the following committee to draft amendments to the cities and towns law for presentation to the Legislature: Finley P. Mount, of Crawfordsville; M. A. Brouse, Mayor of Kokomo; George A. Carr, Mayor of Greenfield; J. F. McBary, Councilman of Logansport, and W. A. McInerry, President of the Board of Public Works of South Bend.

THE NORTHERN OHIO TRACTION AND LIGHT COMPANY has absorbed northern Ohio traction lines, including the Canton, Akron, Massillon, New Philadelphia, Uhrichsville and Tuscarawas lines, the deal involving about \$20,000,000. Among the directors of the new concern are Henry Everett, Barney Mahler and E. W. Moore.

THE PRODUCTION OF PORTLAND CEMENT in the United States during 1905, according to a bulletin issued by the Geological Survey, amounted to 35,246,812 barrels, valued at \$33,245,867. This is a gain of 8,740,931 barrels and \$9,890,748 in value over the previous year.

ALEXANDER, J. PARK, of the Courthouse Building Commission, Akron, O., has made many efforts to compel Architect Dyer of Cleveland to appoint an inspector for the courthouse and to return the money paid him for an inspector, but without success. Mr. Dyer visits Akron three times a week to superintend the work.

BOODY, DAVID A., President of the Board of Trustees of the free public library system of Brooklyn, N. Y., will speak at the meeting of the American Library Association at Narragansett Pier, June 29 to July 6, on the "Public Library as a Municipal Institution."

CAHILL, DANIEL W., former Mayor of Watertown, N. Y., was recently appointed State Superintendent of Public Buildings, to succeed Robert J. Hill, deceased.

COYLE, WILBUR F., City Librarian of Baltimore, Md., recently submitted the following comprehensive report to the Mayor and City Council: "Gentlemen—Without going into monotonous details as to what has been done by the city library, I beg to say we have endeavored to leave undone as few things as possible."

CREAMER, D. S., was recently named State Fire Marshal of Ohio and has appointed John P. Brennan, of Urbana, chief clerk.

CUTLER, JAMES G., Mayor of Niagara Falls, N. Y., City Engineer Read and Water Commissioner Callahan recently visited Buffalo to inspect the waterworks plant, and to secure information in regard to installing a 5,000,000-gallon pump in their home city.

FLOYD, W. H., on his retirement as City Engineer of St. Joseph, Mo., recently, was presented with a pair of field glasses by the office force.

GOODS, CAPT. CHARLES TUTOR, was recently installed as Chief of Police of Alexandria, Va., by Mayor Frederick J. Paff, vice Capt. James Webster, resigned, who served in the position for about forty years.

HASSAM, WALTER E., Street Commissioner of Worcester, Mass., who was in the city employ nineteen years, has tendered his resignation to become general manager of the Hassam Paving Company. The company will do general construction work, including paving, bridge building and masonry, with offices at 311 Main street, Worcester.

HUTCHINSON, E. C., State Road Commissioner of New Jersey, will shortly experiment with asphalt, without the smooth finish found on city streets, instead of macadam for country roads, thus making a dustless roadway.

KNIGHT, A. M., Mayor of Waycross, Ga., is leading the campaign for a bond issue for water and sewer systems, schools and other public improvements.

MURRAY, GEORGE C., in speaking against graveling country roads before the County Board at Peoria, Ill., said Peoria county, since 1876, has spent more than the entire county debt, \$300,000, for gravel roads.

A Cliplet

"So you saw Niagara Falls?"
 "Yes," answered the veteran member of the Fire Department.
 "I've waited all these years and I saw it at last."
 "It is wonderfully big and impressive, isn't it?"
 "Yes. It's all that. But I'm blessed if I can see the good of playing all that water where there isn't any fire."—*Exchange*.

SALISBURY, MD., AND ITS WORK

City Contemplates Expenditure of \$50,000 on Paving—
Rates for Water and Electric Lights—Composition
of Municipal Government

SALISBURY, Md., with a population of about 5,000 and assessed valuation of \$3,000,000, has a tax rate of 45 cents and a debt of \$4,500. Plans are under way for the expenditure of about \$50,000 on paving in the near future. The water and electric lighting systems are under corporate management. The city pays \$60 per year for each arc light and \$16 for each 16-candlepower incandescent lamp. For water the city pays \$2,900 per year, including nineteen fire plugs at \$20 each. The government consists of a Mayor and five Councilmen, one of whom is President; a City Clerk, Superintendent of Streets, and a recently appointed Board of Street Commissioners, consisting of three members, appointed by Council.

The following water rates of the Salisbury Water Company have been adopted and are made a part of the contract with every person who takes water, and every such person in his application agrees to be bound thereby. The company imposes no restrictions on water takers which impair their right to the use of all the water necessary for the various purposes for which licenses are issued, but only such as are necessary to prevent waste and for the mutual protection of the water company and the consumers.

Dwellings

Hydrant in yard or kitchen or one faucet	\$ 6.00
Hydrant in both yard and kitchen	7.25
Bath, hot or cold water, or both	3.00
Stationary Wash Stand, each	1.25
Water Closet, self-acting	3.60
Stationary Wash Tub	1.25
Urinal	2.50
Bidet or foot bath	1.25
Pave Wash of every description, or hose attached to hydrant for that purpose for each 30 feet front or less, with other supplies	3.00
Each additional foot front	.06
Pave Washes, or hose attachments, when taken without any other supply	6.00

Stores, Offices and Shops

Drug Store, each faucet	\$ 6.00
Liquor Store, each faucet	10.00
All other stores, each faucet	6.00
Printing Office, each faucet	7.00
Offices generally, one faucet	6.00
Barber Shop, one faucet	6.00
Each additional faucet	2.50
Blacksmith Shop, one fire	6.00
Each additional fire	2.50
Carriage and Wheelwright shops, one faucet	6.00
Each additional faucet	2.50
Shops generally, one faucet	6.00
Each additional faucet	2.50

Boarding Houses

Bath, hot or cold water, or both	\$ 6.00
Water Closet, self acting	6.00
Hydrant in yard or kitchen	8.00
Hydrant in both yard and kitchen	10.00
Stationary wash stand, each	2.00
Slop Sink, each	2.00

Hotels and Livery Stables

Special rates made by the Water Committee.

Building Purposes

Stone Wall, per perch	\$.02
Brick, per thousand	.05
Plastering Lime, per bushel	.03

Meter Measurements

Five thousand gallons and under a day, per thousand gallons \$.25
Over five thousand gallons per day, per thousand gallons .20
Meters will be attached when deemed necessary by the Water Committee, and their use will be charged for at the rate of ten per centum per annum, together with the cost of attaching the same.

WHAT WILMINGTON IS DOING

Philadelphia's Neighbor a Thriving Manufacturing Center—
Interesting Statistics—Bonded Indebtedness and Re-
ceipts and Expenditures—Garbage Disposal

THE city of Wilmington, Del., where is located one of the oldest municipal water systems in the United States, is a thriving city of 85,000 people, almost within a stone's throw of Philadelphia. The following interesting facts concerning the city have been gathered from various local reports and other reliable sources, and go far to show the steady growth and increasing importance of the place:

Wilmington's assessed valuation is \$42,000,000.

Tax rate, \$1.50 per \$1,000.

Ponded indebtedness, \$2,252,200, as follows:

Sinking fund loan.....	\$1,659,100
Balance of \$200,000 for waterworks, issued July, 1874, interest 6%.....	20,100
Balance of loan, dated May, 1875, for \$125,000 for incorporated waterworks @ 6%.....	23,500
Loan authorized April, 1883, for purchase of water rights @ 4½%.....	60,000
Balance of loan dated April, 1883, for \$120,000 for waterworks @ 4%.....	85,000
Loan for purchase of public park, issued April, 1885, @ 3½%.....	150,000
Balance of loan, dated May, 1897, for garbage crematory, \$15,000 @ 4%.....	4,500
Bond issue, Water Department.....	200,000
Temporary bank loan.....	50,000
	\$2,252,200

Expenditures for year, \$797,392.88, as follows:

Street and sewer appropriation.....	\$100,000
Park commissioners.....	26,000
Board of Education.....	199,478
Fire Department.....	43,162
Police Department.....	94,219
Health Department.....	1,000
Salaries.....	49,983
Garbage removal.....	13,850
Crematory.....	7,050
Sinking fund and interest.....	37,851
Redemption of loans.....	18,000
Interest on bonds and redemption.....	82,000
Repayment of temporary loan.....	50,000
Balance on hand.....	51,087
Miscellaneous.....	23,712.88
	\$797,392.88

The removal of garbage in the city is done under contract at \$13,850 per year, not including ashes or refuse. It is destroyed in an incinerator owned and operated by the city.

This incinerator is an old model Dixon, erected eight years ago at a cost of \$15,000, and consists of two furnaces, each with a capacity of 30 tons. The cost of operation, with coal at \$3.47 per ton, was \$9,500 last year.

The police force is a very efficient body of men, consisting of 62 patrolmen and 26 other officers, under command of Mr. George Black, Chief, who, although only 37 years of age, has been identified with the department since its inception, in 1893. The force is outside of politics, as neither the Mayor nor Council has any power over it. The control lies in a Board of Commissioners appointed by the Magistrate. The Fire Department is a volunteer one, but well equipped and well manned.

BRITISH AND AMERICAN STREET RAILWAYS

Contrast of Conditions in Two Countries—Views of an English Authority—Washington and London —Boston Elevated and Subway Cars—Schools for Motormen

MR. A. L. C. FELL, Manager of the London County Council's street railway system, who visited this country, has reported his observations to the Council, which has been giving lengthy consideration to the subject. His tour included the cities of New York, Washington, Pittsburg, Buffalo, Boston, Albany, Schenectady and Toronto.

As the conduit system was adopted for a large part of the London County Council's mileage, it is of interest to note Mr. Fell's comparison—or rather, contrast—between London and Washington conditions. In the latter case, a large manhole is placed every $31\frac{1}{2}$ feet along the track, and the mud and dirt in the conduit is collected by an insulated hand scraper, made to fit the bottom of the conduit. It is then removed with hoes or scoops through these manholes without difficulty. In London the sump pits and manholes are 40 yards apart, so that if there is an accumulation of mud or dirt in the bottom of the conduit it is practically impossible to push this along at one operation to the nearest sump pit, as the dirt builds up in the conduit and is liable to short circuit the conductor tees and trouble is caused by mud being splashed up on the insulators. In Washington the mud and refuse have to be pushed such a short distance that no trouble is experienced. No water is used in Washington for cleaning when the dirt in the conduit is comparatively dry, but the difference in the working conditions is emphasized by the fact that the conduit is only cleaned out about once in six months, whereas in London this has to be cleaned out every few days. Mr. Fell considers that the cost of cleaning out the London conduits would be enormously reduced if alternate large insulator manholes could be provided.

In regard to subways, in which London has a special interest at this time, Mr. Fell claims great advantage for a universal fare in a subway, and also the practice of issuing tickets to passengers before they are allowed on a station platform. In New York, the report states, the regulation of the passengers entering and leaving the cars, both on the elevated and the subway lines, is very bad. The passengers are allowed to get on and off at either end, and the cars are often delayed for a considerable time at the stations; much less confusion would be caused if the passengers entered at one end of each car and left by the other. In connection with the street cars, Mr. Fell noticed that the passengers assisted the service very much by getting on and off the cars quickly; quite different from in London.

CONDITIONS IN BOSTON

Reference is made to the fact that, in Boston, the elevated and the subway cars are operated together, and Londoners are reminded that the conditions of traffic

in the Boston subways are typical of the conditions which may be expected in the Aldwych to Holborn subway, as both street and special subway cars are run over the lines, but as the single-deck cars in London will have to run through the outside districts *via* some of the existing curves, which are very sharp, the cars cannot be built more than 33 ft. 6 in. long over all, by 6 ft. 10 in. wide, whereas some of the Boston cars are nearly 50 ft. long by 8 ft. 9 $\frac{1}{2}$ in. wide. The London cars will consequently only seat thirty-six passengers, whereas the large Boston cars seat sixty passengers, and in the latter vehicles provision is made so that a very large number of passengers can stand up in the center gangway. This, in London, would be against the police regulations, as no passengers are allowed to stand in any car. The Boston regulations for dealing with the passengers on the elevated and subway lines are considered superior to those in New York. In Boston, a definite rule prevails that passengers can enter a car at both ends, but they have to leave by a special door in the center.

SCHOOLS OF INSTRUCTION

Motormen in America are taught, not only to drive a car, but to be able to deal promptly with any minor defects which may appear when a car is in service. There are several admirably-equipped schools. In these schools the actual equipments, brake gear, etc., used on the cars are connected up and arranged on a model car, so that the learners may have an exact idea as to what the working conditions are. The whole of the wiring, instead of being bunched together as on a car, is laid out so that the men may study the connections. The truck frame is lifted up off the ground so that the wheels may revolve freely when the controllers are operated by the learners. In addition to the ordinary car equipment, models and drawings of all the working parts are provided. A first-class technical instructor is engaged, who gives lectures and practical demonstrations to the various grades of men who are learning driving, and also to the older employees when any new development is introduced into the equipment of the cars. It is found advisable to periodically re-examine the whole of the men in the service. In view of the fact that a large number of men will have to be taught motor-driving on the London County Council's tramways, Mr. Fell strongly recommends that a school should be fitted up at the Camberwell depot, and a fully-qualified technical instructor appointed, and that the present practical instructor act as his chief assistant demonstrator. The provision of recreation rooms for American employees is also favorably commented on, as is the wonderful development in the introduction of steam turbines in American power station work by the General Electric Company and the Westinghouse Company.

MILWAUKEE AND SMOKE ABATEMENT

Interesting Report of City Inspector—A Year's Work to Lessen Evil—Modern Devices—Progress and Results—Alterations and Improvements—Economy a Feature

By CHARLES POETHKE, Smoke Inspector, Milwaukee, Wis.

During the year 1905 the work of my department gave the following results:

	1904.	1905.
Number of steam plants on record.....	407	429
Total number of boilers in said plants.....	886	931
Total nominal horsepower of boilers.....	98,407.5	108,820.4
Average nominal horsepower per boiler..	111	117
Total grate surface, in sq. ft.....	23,501	24,531
Total tons of coal burned in 24 hours.....	2,062.85	2,233.4
Average coal per h.p. per hour (lbs.).....	3.61	3.48
Average coal per sq. ft. grate per hr. (lbs.)..	12.90	12.89
Total number of chimneys.....	471	506
Average height of chimneys in feet.....	80.8	82.3
Average flue area of chimneys, in sq. in....	1,460	1,536
Chimneys changed or rebuilt.....	7	25
Plants using smokeless fuel.....	46	60
Hard coal 17, Pocahontas 27, Coke 2 (1904).		
Hard coal 22, Pocahontas 35, Coke 3 (1905).		
Plants using wood, sawdust or shavings..	41	44
Plants using bark.....		9
Plants using oil.....		2
Plants using gas.....		3
Total smoke-preventing devices in use....	196	295
New devices installed.....	66	98
Complaints filed.....	38	48
Notices served to abate smoke nuisance...	41	
1st notices served.....		77
2d notices served.....		67
3d notices served.....		62
Final notices served.....		23
Observations taken.....	52	209
Smoke charts made.....	26	178
Permits issued.....		63

It will be noted that 99 smoke-preventing devices were installed during the year. These comprise three classes of stokers, the down draft furnaces and the automatic steam and air jet systems, as follows:

Underfeed stokers.....	32
Traveling or chain grate stokers.....	2
Inclined grate stokers.....	15
Down draft furnaces.....	6
Automatic steam and air jet systems....	44

It will also be noted that the average height and flue area per chimney is greater this year than last. This is due to the fact that it is now necessary for persons constructing or altering any stationary steam plant, boiler or furnace to secure a permit from the Smoke In-

spector's Office before commencing such work. Generally it has been necessary that they build a larger and higher chimney than they had contemplated or had in service before, and through this permit clause it will ultimately mean that all boilers, furnaces and chimneys will be properly constructed.

There are now fourteen more users of smokeless fuel than there were last year, but as the cost is high and is steadily increasing, I do not look to that means for permanent abatement in plants of any size.

The fact that there is less coal burned per horsepower and per square foot of grate surface per hour now than last year is an indication of economy in fuel, caused by more skillful manipulation of the fires and a more complete combustion.

The manufacturers have, as a rule, shown a willingness to co-operate with the work of abating the smoke nuisance. This has been especially so in the cases of the brewers and millers, all of whom have either adopted devices or systems for smoke prevention or are now planning for the construction or alteration of their plants for that purpose.

The results that have been attained and the progress being made toward the abatement of the smoke nuisance are very gratifying. The emission of dense smoke from a plant is always a cause of annoyance to someone, but with that same plant cleared up and no dense smoke being emitted, there is nothing to attract attention and no cause for annoyance; the fact that it had been a nuisance is quickly forgotten. Though the smoke situation at present is far from being satisfactory, it must be taken into consideration that there are many difficulties to overcome. To one not familiar with the work it may appear that all that is necessary would be to serve notice and then bring action against the offenders if they would not immediately make the necessary changes; however, this is not the case.

Many drawbacks have been found in the smoke ordinance, which at one time was thought perfect. One of these is the clause requiring three notices to be served within ten days. There should be no time limit in which such notices are to be served.

SMOKE CHART NO. _____

NAME _____

DATE _____

ADDRESS _____

TIME _____

MINUTES				TOTAL	
DENSE	LIGHT	CLEAR		DENSE	LIGHT
1	2	3	4	5	6
7	8	9	10	11	12
13	14	15	16	17	18
19	20	21	22	23	24
25	26	27	28	29	30
31	32	33	34	35	36
37	38	39	40	41	42
43	44	45	46	47	48
49	50	51	52	53	54
55	56	57	58	59	60

A MILWAUKEE SMOKE CHART.

School Buildings in Paterson, New Jersey

Of the various local departments in the city of Paterson, N. J., at the present time, the most active of all is the School Board. The additions to the present system of schools, either actually in process of construction or soon to be begun, represent an expenditure of over half a million dollars.

Most important is the new High School building, which is to be erected from plans by Mr. William F. Fanning, a young architect of Paterson. Mr. Fanning's plans were selected from among a score in open competition and call for a building 200 x 200 feet, of fire-proof construction and containing 64 classrooms, an assembly room, chemical laboratories, a manual training school, a gymnasium with shower baths and circular running track and an auditorium capable of accommodating 1,500 persons. The estimated cost is \$300,000 for the building with \$100,000 additional for equipment, though it is expected the actual figures will somewhat exceed those given. It will take from two to three years to complete.

An additional public school (No. 21) is also building from plans by Mr. Fanning, the David Henry Building holding the contract for \$65,000, which does not include equipment.

Mr. J. Oscar Bunce, architect, of Paterson and New York, is the designer of the new Public School No. 15, which is to replace the one destroyed by fire.

Some Hillisms

"THESE mimeographic puffs you send out by the wholesale, all alike, full of claims or opinions and barren of engineering information."

"It is pretty certain that a paper editorially interesting will be read. It is pretty certain that a paper working off puffs and write-ups as editorials will not be read. Every time a paper refuses one of your own mimeographic articles it ought to increase your respect for it."

"No self-respecting newspaper management can have much respect for the advertiser who is always threatening to quit."

"Never draw unless you intend to shoot."

"A four-and-a-half-inch cut won't go into a three-inch space and leave a whole lot of room for a talk."

"Words count in 'copy,' the fewer the better, provided they tell the story. Description is necessary, but description of details is better than a treatise on the whole machine. When you briefly describe the machine tell *what* it does and *how much* it does."

"Your message in a paper paid for by a possible buyer reaches him in a receptive mood when he is thinking about his work. No circular can do that."

Good will, reputation, the results of advertising can be bought cheap and paid for on the installment plan. It pays no taxes, requires little attention, is in itself an insurance. Why don't men buy more of it? Properly kept up, there is no business investment so safe, reliable and secure.

Condensed from the address of the President of the Trade Press Association.

BOOK REVIEWS

The Heart of the Railroad Problem. By FRANK PARSONS, Boston: Little, Brown and Company, 1906.—Cloth, 5½ by 8 inches, 364 pages. Price, \$1.50 net.

According to Professor Parsons, the heart of the railroad problem is rotten. A principle of the common law is that common carriers must be impartial. As a matter of fact, railroads unjustly favor persons, places and commodities and they do it constantly, systematically and habitually. How this state of affairs has come about is discussed at length, from the passage of the interstate commerce law to the present time. In instances where the letter of the law has been obeyed, its spirit has been nullified by regulations regarding free cartage, demurrage, the expense bill system, goods not billed, midnight tariffs, terminal facilities and private car abuses. The author does not deal in glittering generalities, but fortifies all his statements with detailed facts and references to authorities. Discrimination has made and unmade towns and even threatened the prosperity of great cities. The Baltimore Chamber of Commerce, on one occasion, stated "we are gradually shriveling up because of discrimination in freight rates * * * business in this city has almost come to a standstill." The Federal Constitution says, "No preference shall be given by any regulation of commerce in revenue to ports of one State over those of another." By manipulating rates on exports and imports, railroads have assumed more authority than is given to the government. From the long catalogue of injustice and discrimination one turns with relief to the remedies that may be found in fixing rates by public authority, or better still, the author thinks, by public ownership. The vital conclusion seems to be the necessity of the dominance of public interest, the value of being in possession and in having your own servants in possession instead of giving orders to the servants of others.

Electric Railway Accounting. By W. B. BROCKWAY, New York: McGraw Publishing Company, 1906.—Cloth, 5½ by 8 inches, 84 pages. Price, \$1.25.

The author is the General Auditor of the Nashville (Tenn.) Railway and Light Company and a former secretary of the Street Railway Accountants' Association, who have already done good work in standardizing the general forms of accounts. The book considers the question from the standpoint of a person intimately acquainted with the actual operation of such work; forms of reports are recommended not only to convey information, but to assist the manager in the intelligent operation of his road. It is this feature that makes the book of special value to anyone interested in public corporations, and the graphic method is very effectively used for the purpose. The difference in the point of view of municipal and railroad accounting is striking, and is a subject deserving of extended consideration on the part of those who advocate the municipal operation of street railways.

City Roads and Pavements Suited to Cities of Moderate Size. Third Edition Revised. By WILLIAM PEARSON JUDSON, C. E. New York: The Engineering News Publishing Company.—Cloth, 6 by 9 inches, 197 pages. Price, \$2.00.

The author, an experienced road builder, has succeeded in putting a great deal of valuable information in a very short space. After a general review of the history and the general characteristics of pavements the author deals specifically with block stone, concrete, wood blocks, sheet and block asphalt and macadam. Treating, as it does, of such a wide subject it is not possible that the work could contain all the knowledge extant on the subject, but it does describe the present state of the paving industry in a remarkably clear and impartial way.

NOTES—QUERIES—CORRESPONDENCE

QUESTION.—Referring to your article, "Water Plant a Success," in Journal of May 30, 1906, you say that the total expense of maintenance of the Trenton, N. J., Waterworks for current year is \$56,137; total receipts, \$150,000; surplus, \$93,863. But do you not fail to charge as expenses the interest, say at 5 per cent., on the total expenditure, \$2,040,322.45, which is \$102,016.12, leaving a net loss of \$8,153.12? A property worth \$2,040,322 would, if owned by a private corporation, pay at least \$40,000 a year taxes to the municipality and a franchise tax of at least \$3,000. Considering this, does not the city of Trenton lose about \$48,000 a year on its municipal operation? Likely a further examination would disclose a still greater loss.

I am interested in municipal ownership, but are there no instances of such ownership anywhere that will show a profit when all the proper charges are counted against the income?

A. E.

ANSWER.—The ideal "municipal ownership" is that in which the municipality does not make any profit whatever, but merely covers the actual expenditure, allowing all profits of whatever kind to go to improvements or to the reduction of the cost to the residents, whether of water, gas or transportation. Any city properly governed and enjoying the confidence of its people should be able to secure all the money it wants locally at 3 per cent. to 3½ per cent., the rates usually paid by savings and other interest-paying banks. Our correspondent's letter shows the necessity for an absolute unification system of accounting, as so strongly advocated by Mr. Harvey S. Chase and others.

*Editor MUNICIPAL JOURNAL AND ENGINEER,
Flatiron Building, New York City.*

Dear Sir:—Just where the rights of a municipality end and those of a railroad company occupying its streets begin seems to be an unsettled question, bobbing up from time to time to work confusion alike in the courts and the public mind. A favorite method of dealing with such vexed questions is by injunction, and cities and railroad corporations the country over have at one time or another been haled into court. But where is the effectual remedy? This matter of injunction, so frequently resorted to and so widely proclaimed, is at best a makeshift. One case I have in mind: The newspapers report that a Virginia judge, upon application of counsel for the Washington-Southern Railway, has restrained the city of Alexandria, Va., from interfering with the company's workmen engaged in repairing unused tracks within the town. And this injunction, it is stated, also permits the railroad company to put in a section of track which Mayor Paff had prevented by detailing policemen to stop all work. Indeed, the rights of the municipality and of the railroad appear sadly jumbled, and who is to say whether corporate greed or public interest shall come out victorious? The courts! Yes, but prolonged litigation is expensive and before it is judicially determined the track will doubtless be laid and the public will be beaten again. As to the merits of this Virginia controversy, I have no decided opinion. But in the interest of cities and towns, large and small, will you not consider this matter of "government by injunction" broadly, earnestly, judiciously, to the end that healthy public sentiment may crystallize for better things? Very truly yours,

Washington, D. C.

HARRY HOLAND.

*Editor MUNICIPAL JOURNAL AND ENGINEER,
Flatiron Building, New York City.*

Dear Sir:—Would it be requesting too much of you to give a little information, through the columns of THE MUNICIPAL JOURNAL AND ENGINEER, as to municipal regulations regarding the obstruction of streets. Apparently in Indianapolis, where I have had the honor of residing a number of years, there is no way to compel the stores in the wholesale district to keep the thoroughfares passable. The matter has been agitated with but little effect, the authorities apparently being opposed to action, and it might be well to give the matter wide publicity, as citizens in other cities undoubtedly suffer from the same cause. Quite recently I met with a fall while running for a car near the crossing of Virginia avenue and Maryland street in this city, having run into an obstruction. Fortunately I was not seriously injured, otherwise I should have taken the matter to the courts. It occurs to me that there should be some law governing the matter, for undoubtedly in most large cities the wholesale men are permitted to use a certain portion of the sidewalk for the display of their goods. But, there appears no reason, even though they be granted this privilege of using the public streets for storerooms, that they should not be compelled to keep them well lighted.

Very truly yours,

A. C. WILLIAMS.

Indianapolis, Ind.

*Editor MUNICIPAL JOURNAL AND ENGINEER,
Flatiron Building, New York City.*

Dear Sir:—I would like, through the columns of your magazine, to remind the authorities that it might be well, especially at this season of the year, to appreciate the necessity of strict adherence to the fire escape laws. In all the large cities, and in many of the smaller ones, there are on the statute books ordinances on the subject. But in how many places are they enforced? Once in a while there is a spasmodic effort by the fire and police officials to secure adherence to the law, but none can deny that, generally speaking, the effort is only spasmodic. Here in the city of New York, where vigilance should be the watchword, judging from the number of municipal employees on the payroll, the violations are particularly flagrant. And this, too, in the face of the fact that it was only a year or so ago that a score or so of lives were lost in a fire because of the negligence on the part of those who are paid to enforce the laws. What a hullabaloo followed! What is the result? Every city department started an investigation to relieve itself from the blame; all vowed that in future all regulations must be enforced. Now, notwithstanding all the excitement created at the time, the authorities are again dormant. Conditions on the East Side are even worse than before the Allen street fire brought death to many people because they could not make their way down the fire escapes, on account of the obstructions placed thereon. Besides this there are other sections which are taking advantage of the dereliction of the officials and are storing surplus household goods on the fire escapes. While in other cities these violations are carried on to an extent, they in no way compare to the outrageous disrespect of the mandates of the law as practised in the First City in the Land. Let the city officials, not only in this city, but in other places, attend to their duty. Let there not be another Allen street fire to shock the sensibilities of the populace.

Very truly yours,

J. A. MURTAGH.

*Editor MUNICIPAL JOURNAL AND ENGINEER,
Flatiron Building, New York City.*

DEAR SIR:—In a letter to a contemporary, a physician called attention to the insanitary and objectionable smells that have always been thrown off by the Garbage Reduction Plant at Barren Island. He protests against its rebuilding on the ground of injury to adjoining property at Rockaway, Arverne, and other neighboring points. There is no question as to the facts of nuisance created in the past and continued over two years, despite the protests and prayers for relief, which were ignored by the city and set aside by the Legislature, on the ground that there was no other means of caring for this refuse.

There are some hundreds of thousands of people owning property valued at several millions of dollars within a radius of three miles from this plant, all of whom must bear the burden of the nuisance created by the work of a private company, who hold the city at its mercy. Will the property-holders on the Long Island shores be content to see another plant of the same kind put up that will perpetuate this nuisance, and probably in a more objectionable form for the next ten years? London, Paris, Berlin, Hamburg, Edinburgh, Glasgow, Manchester, Liverpool, Dublin, and nearly all the large cities of the world destroy this waste by fire, but New York, in the grip of a monopoly that is upheld, contented and catered to by the millionaires in power, refuses to even consider any improvement suggested, dumps the waste within the harbor to defile the beaches, pending the rebuilding of an insanitary objection property destroying system that will continue a trouble almost unbearable in the past without relief for the future.

Very truly yours,

SANITARIAN.

New York City.

*Editor MUNICIPAL JOURNAL AND ENGINEER,
Flatiron Building, New York City.*

Dear Sir:—Is the question of the proper location of a catch basin in a block settled beyond dispute and, if so, what is its best situation? This is a prairie country and there is rarely any fall in the street except what is obtained by making summits in laying out the street. It is a general practice here to put a basin in the middle of each block, the drainage, of course, flowing to it from the center of each intersection. This apparently saves cost of construction of two basins—or at least inlets—in each block. It has a tendency to make the intersection a little high and make the curb shallow around the corners, but no one but an engineer would notice it and I do not know that it is objectionable, anyway. What is the general practice?

Very truly yours,

JOHN GARRY.

Winnipeg, Manitoba, Canada.

LEGAL DIGEST—

A Summary and Notes of RECENT DECISIONS

As to Chicago Streets

DORSCH vs. BEAUMONT GAS CO.—The provision of Section 1536-148, Revised Statutes, which empower a court of common pleas to establish or vacate a street or alley, do not authorize such court to narrow the same.—*Supreme Court, Chicago, Ill.*

Cannot Turn Off Gas

RICHMAN vs. CONSOLIDATED GAS COMPANY.—Held that gas consumers are entitled to injunctions restraining the Consolidated Gas Company from interfering with their supply of gas so long as they tender payment at 80 cents a thousand, as fixed by the Legislature, and that the 80-cent law is in force until declared unconstitutional after a trial on the merits.—*Justice Laughlin, Appellate Division, Supreme Court.*

Depletes the Townsite Fund

BOSTWICK vs. BISBEE.—A verdict of \$1,500 was rendered in favor of Engineer Bostwick for preparing a townsite plot for use in securing a patent for the city.—*District Court, Bisbee, Arizona.*

Mileage Tax—Franchise

CHICAGO GENERAL RAILWAY CO. vs. CHICAGO.—An ordinance imposing a mileage tax as a condition of granting a street railway company the privilege of using the streets is held to be within the authority conferred by a statute providing that the city may give the privilege upon such terms and conditions, not inconsistent with the statute, as the authorities shall deem for the best interests of the public.—*District Court, Chicago, Ill.*

Public Service Corporation Wins

JERSEY CITY vs. NORTH JERSEY TRACTION CO.—I. The city claimed that the company's charter was void. The court holds an act extending the charter legal and also even if this were not the case the company could legally operate under the traction act.

2. A corporation liable to a franchise tax for the use of the public streets under the act of 1900 is not liable to a property tax on the same property.—*Supreme Court, Trenton, N. J.*

Quis Custodiat Ipsos Custodes?

KLEPPER vs. MUNICIPAL CIVIL SERVICE COMMISSION.—The members of the New York City Municipal Civil Service Commission were ordered to be committed to jail for contempt of court by Justice Marean in Brooklyn. The commissioners had failed to obey an order of the court to restore a former rating to Policeman William C. Klepper on the list of eligibles for roundsman after his rating had been reduced because of fines.—*Special Term, Supreme Court, Brooklyn, N. Y.*

School Will Not Keep

JOHN DOE vs. CHILMARK.—The bill against the town authorities, seeking to compel the defendants to maintain a school on No Man's Island, where there are but three children, has been dismissed.—*Judge Sheldon, Massachusetts Supreme Court.*

Sound Warnings—Dangerous Places

LOUISVILLE & NASHVILLE R. R. CO. vs. SAWYER.—The duty to sound warnings when trains approach a trestle over a highway is held to depend upon the dangerous character of the place, which is a question for the determination of the jury.—*District Court, Nashville, Tenn.*

Speculative Injuries from Sewage

SEUFFARLE vs. MACFARLAND et al.—The appeal was from an order of the court below in a proceeding to condemn land for outfall sewer purposes. The trial court refused instructions requested by the appellant by which the jury were authorized to allow damages for depreciation in the value of his land resulting from the foul odors which would arise from the sewer when completed. The Court holds that the instructions were properly refused, because they involved conjectural and speculative injuries.—*Justice McComus, Court of Appeals, District of Columbia.*

Use of Electricity

MANFAN'S ADMINISTRATOR vs. LOUISVILLE ELECTRIC CO.—Held that electricity being a powerful and dangerous agency, the rule has been adopted that those who manufacture and use it must exercise the utmost care to protect others from the danger; that in handling so dangerous an agency nothing short of the utmost care is sufficient; and that where one is employed in shops where electricity is being used he has a right to assume, in the absence of notice to the contrary, that the transformer and other appliances for furnishing it are in good order and free from defects.—*Court of Appeals, Louisville, Ky.*

DIRECTORY OF MUNICIPAL AND ALLIED SOCIETIES

June 26-29.

SOUTH DAKOTA STATE FIREMEN'S ASSOCIATION.—CONVENTION AND TOURNAMENT, SIOUX FALLS.—J. H. Pettibone, Secretary, Sioux Falls.

June 26-29.

AMERICAN SOCIETY OF CIVIL ENGINEERS.—ANNUAL CONVENTION, THOUSAND ISLANDS, NEW YORK.—Charles Warren Hunt, Secretary, 220 West Fifty-seventh Street, New York.

June 26-28.

NATIONAL INTERSTATE TELEPHONE ASSOCIATION.—Auditorium Hotel, Chicago, Ill.

June 27-29.

SMOKE INSPECTORS OF THE UNITED STATES AND CANADA.—FIRST ANNUAL CONVENTION, DETROIT, MICH.—John Fairgrieve, Smoke Inspector, Detroit, Chairman of Committee.

June 28-29.

VERMONT STATE FIREMEN'S ASSOCIATION.—CONVENTION AND TOURNAMENT, BURLINGTON, VT.—E. D. Moore, Secretary, Burlington.

June 29-July 13.

AMERICAN LIBRARY ASSOCIATION.—TWENTY-EIGHTH CONFERENCE, NARRAGANSETT PIER, R. I.—J. I. Wyer, Jr., Secretary, 10½ Beacon Street, Boston, Mass.

June 29-July 4.

SOCIETY FOR THE PROMOTION OF ENGINEERING EDUCATION.—ANNUAL CONVENTION, ITHACA, N. Y.—M. S. Ketchum, Secretary, Boulder, Col.

July 10-12.

NORTH CAROLINA STATE FIREMEN'S ASSOCIATION.—CONVENTION AND TOURNAMENT, ASHEVILLE, N. C.—W. C. Von Glahn, Secretary, Wilmington.

July 10-14.

AMERICAN WATER WORKS ASSOCIATION.—ANNUAL CONVENTION, BOSTON, MASS.—J. M. Diven, Secretary, 14 George Street, Charleston, S. C.

July 19-20.

CONNECTICUT STATE FIREMEN'S ASSOCIATION.—CONVENTION, WEST HAVEN.—John S. Jones, Secretary, Westport.

July 19-20.

AMERICAN SOCIETY OF HEATING AND VENTILATING ENGINEERS.—SEMI-ANNUAL MEETING, CHICAGO.—W. M. Mackay, Secretary, P. O. Box 1818, New York City.

August 15-17.

INTERNATIONAL ASSOCIATION OF MUNICIPAL ELECTRICIANS.—ANNUAL MEETING, NEW HAVEN, CONN.—Frank P. Foster, Secretary, Corning, N. Y.

September 26-28.

LEAGUE OF AMERICAN MUNICIPALITIES.—TENTH ANNUAL CONVENTION, CHICAGO.—John MacVicar, Secretary, Des Moines, Iowa.

September.

NEW ENGLAND WATER WORKS ASSOCIATION.—ANNUAL CONVENTION, WHITE MOUNTAINS.—Willard Kent, Secretary, 715 Tremont Temple, Boston, Mass.

October 9.

AMERICAN SOCIETY OF MUNICIPAL IMPROVEMENTS.—ANNUAL CONVENTION, BIRMINGHAM, ALA.—George W. Tillson, Secretary, Municipal Building, Brooklyn, N. Y.

October 9-12.

INTERNATIONAL ASSOCIATION OF FIRE ENGINEERS.—ANNUAL CONVENTION, DALLAS, TEXAS.—Jas. McFall, Secretary, Roanoke, Va.

October 15-19.

AMERICAN STREET AND INTERURBAN RAILWAY ASSOCIATION.—ANNUAL CONVENTION, COLUMBUS, OHIO.—B. V. Swenson, Secretary, 30 Wall Street, New York City.

ADVANCE AND WEEKLY CONTRACT NEWS

Relating to Municipal and Public Work—Street Improvements—Paving, Road Making, Cleaning and Sprinkling—Sewerage, Water Supply and Public Lighting—Fire Equipment and Supplies—Buildings, Bridges and Street Railways—Sanitation, Garbage and Waste Disposal—Police, Parks and Miscellaneous—Proposals and Awards

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STREET IMPROVEMENTS

Florence, Ala.—Plans are under way to pave sidewalks on several streets.—E. G. Negley, Engineer.

Fayetteville, Ark.—Plans are being prepared for extensive street paving.—J. W. Massengale, Secretary of Commercial League.

Carrollton, Ga.—An elector will be held July 9, to decide the question of issuing \$40,000 street improvement bonds.

Indianapolis, Ind.—Petitions have been filed asking for improvements on Brookside avenue, Washington boulevard, Delaware, New Jersey, Thirty-first and Tallman streets.

Paducah, Ky.—Ordinances are before Council to pave Washington street from First to Third; First street from Washington to Broadway, and Second street from Kentucky avenue to Washington street.—L. A. Washington, City Engineer.

Boston, Mass.—The Boston and Maine Railroad has asked authority to issue \$42,037 for grade crossing elimination.—H. Bassell, Chief Engineer.

Omaha, Neb.—Plans are under way to pave a part of Twenty-fourth street.

Cincinnati, O.—It is estimated that the cost of improving Conroy street will be \$9,689.—City Engineer Danenhower.

Cincinnati, O.—The citizens of Oakley have asked an election, July 14, to vote on the question of issuing \$5,000 sidewalk and \$5,100 street improvement bonds.

Portland, Ore.—A plan is under way whereby Hawthorne Slough may be drained and streets opened through it.

Bluefield, W. Va.—No bids were received for paving four streets; bids are readvertised.

Racine, Wis.—All bids for reinforcing Asylum avenue were rejected; new bids will be advertised.

PROPOSED WORK

Washington, D. C.—Water mains will be laid on Bryant, Fifth and E streets.—Thomas L. Hicks, Director of Public Works.

Moline, Ill.—Street improvements will be made, at a cost of about \$100,000.

La Porte, Ind.—Bids will be received for street work, as follows: 4½ miles of cement sidewalks, 3½ miles macadam pavements, 7½ miles curb and gutters, and 3,567 square feet of brick pavement.—Chas. H. Martin, City Engineer.

Ardmore, I. T.—Street improvements will be made; cost, \$125,000.

Opelousas, La.—A street-grading machine will be purchased and streets will be sprinkled.—Board of Aldermen.

Baltimore, Md.—Monroe street will be improved.—A. S. Goldsborough, Chief Clerk.

Adrian, Mich.—An issue of \$30,000 paving bonds has been voted.

Fremont, Neb.—It is proposed to issue \$12,000 paving bonds.

Albany, N. Y.—An ordinance has been passed to pave John street.—Alderman Finn.

Paterson, N. J.—Improvements will be made on Twenty-first, Twenty-second, Thirtieth, Dakota, Dey and Paxton streets.—Robert Dalzell, City Street Commissioner.

Niagara Falls, N. Y.—An issue of \$10,000 bonds has been authorized for improving Whitney avenue, Eighth, Fifth, Eighteenth, Third and Main streets.

Barberton, O.—Cornell street will be paved, comprising several miles of pavement and other work.

Chillicothe, O.—High street will be paved with vitrified brick, asphalt or hard-burned brick; a bond issue of \$26,000 will be authorized for improvements.

Cleveland, O.—The cost of the improvement at Jefferson avenue, by the railroad company, will be \$85,000, \$36,000 of which will be paid by the city.

Columbus, O.—Ordinances have been passed allowing \$4,000 for improving Summit street; \$2,000 for improving Michigan street; \$11,000 for improving High street; \$3,000 for improving Bryden road, and \$9,000 for improving Indianola road.

Dayton, O.—An ordinance has been passed to extend Rubicon street from Ashley to Wyoming street.

Springfield, O.—An ordinance has been passed authorizing the issue of \$15,000 paving bonds.—W. H. Sieverling, City Engineer.

Racine, Wis.—Sixteenth street will be paved.

Zanesville, O.—Belnap street will be paved.

Houston, Tex.—Several additional streets will be paved with brick, the city to furnish material, 3,500,000 paving bricks having been purchased.—Municipal Commission.

Georgetown, Wash.—Bids will be advertised for improving Charleston avenue, at an estimated cost of \$11,000.

Seattle, Wash.—An expenditure of \$10,000 will be made for improving M street; contract to be let.

Huntington, W. Va.—About \$55,000 will be expended for paving.—H. W. Blass, City Clerk; John Coon, Chairman, Committee.

CONTRACTS TO BE AWARDED

Lake Village, Ark.—Bids will be received, July 1, for constructing 52,000 square feet of concrete walk.—Johnson Chapman, Chairman, Board of Improvement.

Chicago, Ill.—Bids will be received, June 28, for twenty items of paving on various streets.—Board of Local Improvements.

Chicago, Ill.—Bids were opened, June 26, for paving, sewer work and grading for Union Park.—West Chicago Park Commissioners.

Rock Island, Ill.—Bids were opened, June 20, for laying cement walks in several streets.—Geo. C. Gobet, Clerk.

Ottumwa, Ia.—Bids were opened, June 18, for constructing cement walks.—F. S. Best, Secretary, Board of Public Works.

Detroit, Mich.—Bids were opened, June 25, for constructing cement sidewalks.—Philip Breitmeyer, Commissioner, Parks and Boulevards.

St. Paul, Minn.—Bids were opened, June 25, for paving with sand-lime patent brick, according to plans and specifications.—John S. Grode, President, Board of Public Works; R. L. Gorman, Clerk.

Cincinnati, O.—Bids will be received, July 2, for improving Winfield avenue by grading, curbing and macadamizing.—M. J. Keefe, Clerk, Board of Public Service.

Cleveland, O.—Bids will be received, July 7, for grading Lake Shore boulevard.—Julius C. Dorn, Clerk, Board of Commissioners; W. H. Evers, County Engineer.

Youngstown, O.—Bids will be received, July 16, for the purchase of \$47,880 street improvement bonds.—Wm. T. Davies, City Auditor.

Indiana, Pa.—Bids will be received, June 29, for paving portions of Philadelphia, Church, Water, Seventh and Sixth streets.—R. M. Mullin, Borough Engineer.

CONTRACTS AWARDED

San Francisco, Cal.—The following paving contracts have been awarded: Marshall Square and City Hall avenue, City Street Improvement Company, at \$4,689; Ellis street, Barber Asphalt and Paving Company, \$22,315.65; Mission street, Barber Asphalt and Paving Company, \$25,000; and Turk street, Barber Asphalt and Paving Company, \$16,629.70.—Public Works Commissioners.

Wilmington, Del.—The contract for the Faulk road has been awarded Theodore Harsh, at \$20,600.

Paxton, Ill.—The contract for paving eighteen blocks of streets has been awarded H. C. Finley, of Hoopeston, at \$44,389.

Detroit, Mich.—The contract for paving Woodbridge street has been awarded Thomas E. Currie, at \$3,549.49.

St. Joseph, Mo.—The contract for macadamizing Fourteenth street has been let to the St. Joseph Rock Crushing Company, at \$1,408.

Syracuse, N. Y.—The contract for constructing sidewalks has been let to J. C. Dempsey, one sidewalk contract going to W. C. Hookway.

Columbus, O.—The contract for furnishing 25,000 pressed dry brick, each day for a period of six months, to New York contractors, has been awarded the Hocking Valley Brick and Terra Cotta Company; after six months, 200,000 bricks per day, for two years, will be furnished.

Youngstown, O.—The contract for street improvements in South Heights has been let to Fleming and Donohue, at \$45,000.

Erie, Pa.—The contract for paving French street has been awarded.

Mineral Point, Wis.—The contract for laying 40,000 feet of cement sidewalks has been awarded A. S. Hawley, Baraboo.

Racine, Wis.—The contract for cement walks in Fourth Ward Park was awarded N. Reichert, at \$9.30 a square yard.

ROAD MAKING

Jacksonville, Fla.—A number of roads will be repaired.—Chairman, Roads and Bridge Committee.

Columbus, Ind.—Bids will be received, July 2, for constructing one mile of gravel road in Rock Creek township.—Wm. A. Morris, County Auditor.

Crownpoint, Ind.—Bids will be received, July 2, for constructing three miles of gravel road in St. John, Calumet, and North townships.—C. A. Johnson, County Auditor.

Green Castle, Ind.—Bids will be received, July 2, for constructing 11,931 feet of gravel road.—C. C. Hurst, County Auditor.

Petersburg, Ind.—Eight miles of pike will be built, at a cost of \$20,000.

Rockville, Ind.—Bids will be received, July 2, for constructing a gravel road in Jackson township.—Board of County Commissioners.

Spencer, Ind.—Bids will be received, July 3, for macadamizing three miles of road in Franklin township.—Board of County Commissioners.

Baltimore, Md.—Bids will be received, July 14, for grading and macadamizing four and one-half miles of road—Maryland Geological Survey Commissioner; W. W. Crosby, Chief Engineer.

Pentwater, Mich.—Plans have been prepared for one mile of gravel road in Newfield township and Benona township.—F. F. Wetmore, County Surveyor.

Missoula, Mont.—About two and one-half miles of highway will be built; part of the contract has been let.

Concord, N. H.—Gravel roads will be constructed in Londonderry, Hollis, Warner, Raymond, Enfield, Epping and Tuftonboro, at a cost of \$13,725.—A. W. Dean, State Engineer.

Camden, N. J.—An issue of \$66,000, 4 per cent., 30-year, road bonds has been decided upon.

Morristown, N. J.—All bids opened, June 11, for macadamizing roads have been rejected; new bids will be received, July 9.—G. A. Becker, Director, Board of Chosen Freeholders.

Mt. Holly, N. J.—Bids will be received, July 9, for macadamizing the road known as Lumbeeton and Medford road.—Board of Chosen Freeholders.

New Brunswick, N. J.—Bids will be received, July 13, for building Cranbury Neck road, Cheesquake road, Jamesburg and Dayton road, Port Reading road, and the road to Bound Brook.—Board of Freeholders.

Paulsboro, N. J.—Bids will be received, July 3, for constructing a stone road; also for a bitulithic street.—Wm. C. Carter, Woodbury, Borough Engineer; Chas. M. Gwilliam, Borough Clerk.

Albany, N. Y.—Bids will be received, June 29, for improving 1,900 miles Guilderland Center road; 6,820 miles Glenmount, Fema Bush road.—Henry A. Van Alstyne, State Engineer and Surveyor, Albany, N. Y.

Albion, N. Y.—Bids will be received, June 30, for improving 3,473 miles Five Corners-Kuckville Sec. 1; 5,801 miles Five Corners-Kuckville Sec. 2; 3,424 miles Kendall Corners road.—Henry A. Van Alstyne, State Engineer, Albany, N. Y.

Auburn, N. Y.—Bids will be received, June 29, for improving 2,190 miles Owasco road; 3,165 miles Fleming road.—Henry A. Van Alstyne, State Engineer and Surveyor, Albany, N. Y.

Ballston Spa, N. Y.—Bids will be received, June 28, for improving 1,000 miles of Waterford-Cohoes road; 4,358 miles of Saratoga-Ballston road; 1,250 miles Saratoga-Glens Falls Sec. 2 road; 1,840 miles of Mechanicville-Stillwater road; 6,010 miles Saratoga-Schuylerville road.—Henry A. Van Alstyne, State Engineer and Surveyor, Albany, N. Y.

Ballston Spa, N. Y.—Bids will be received, June 29, for improving 7,250 miles Saratoga-Corinth road.—Henry A. Van Alstyne, State Engineer and Surveyor, Albany, N. Y.

Batavia, N. Y.—Bids will be received, June 30, for improving 5,580 miles Genesee road.—Henry A. Van Alstyne, State Engineer, Albany, N. Y.

Binghamton, N. Y.—Bids will be received, June 28, for improving 3,371 miles Maine road; .618 miles Barker road.—Henry A. Van Alstyne, State Engineer and Surveyor, Albany, N. Y.

Binghamton, N. Y.—Bids will be received, June 30, for improving 3,687 miles Vestal road.—Henry A. Van Alstyne, State Engineer, Albany.

Buffalo, N. Y.—Bids will be received, June 28, for improving 4,227 miles Aurora Sec. 2 road; .735 miles Aurora Sec. 3 road; 1,213 miles Orchard Park road.—Henry A. Van Alstyne, State Engineer and Surveyor, Albany, N. Y.

Buffalo, N. Y.—Bids will be received, June 29, for improving 5,650 miles Clinton street Sec. 1; 6,140 miles Clinton street Sec. 2; 8,770 miles Goodrich road.—Henry A. Van Alstyne, State Engineer and Surveyor, Albany, N. Y.

Buffalo, N. Y.—Bids will be received, June 30, for improving 4,750 miles Hunt's Corners road; 8,860 miles North Collins road.—Henry A. Van Alstyne, State Engineer, Albany, N. Y.

Canandaigua, N. Y.—Bids will be received, June 28, for improving Reed's Corners road, consisting of 2,669 miles of road.—Henry A. Van Alstyne, State Engineer and Surveyor, Albany, N. Y.

Canandaigua, N. Y.—Bids will be received, June 29, for improving 1,090 miles Geneva Sec. 3 road; 1,686 miles Lyons-Geneva road; 5,250 miles Victor-Mendon Sec. 1 road.—Henry A. Van Alstyne, State Engineer and Surveyor, Albany, N. Y.

Canandaigua, N. Y.—Bids will be received, June 30, for improving 6,680 miles Bristol Valley Sec. 2; 2,000 Bristol Valley Sec. 4; 6,790 Victor road.—Henry A. Van Alstyne, State Engineer, Albany, N. Y.

Carmel, N. Y.—Bids will be received, June 30, for improving 5,900 miles Baldwin Place-Manomee road.—Henry A. Van Alstyne, State Engineer, Albany, N. Y.

Cooperstown, N. Y.—Bids will be received, June 29, for improving 4,370 miles Gilbertsville road; 3,537 miles Morris road; 1,260 miles Colliersville road; 2,730 miles Shady Side road; 2,030 miles Colliersville-Milford Center; 3,660 miles Schenerus road.—Henry A. Van Alstyne, State Engineer and Surveyor, Albany, N. Y.

Cortland, N. Y.—Bids will be received, June 28, for improving Cortland-Homer road, consisting of 543 miles of work.—Henry A. Van Alstyne, State Engineer and Surveyor, Albany, N. Y.

Cortland, N. Y.—Bids will be received, June 29, for improving .416 miles Cincinnatus road; 2,924 miles McGrawville road; .913 miles Hartford road; 4,286 miles State Road-Homer; 2,720 miles State Road-Scott.—Henry A. Van Alstyne, State Engineer and Surveyor, Albany, N. Y.

Cortland, N. Y.—Bids will be received, June 30, for improving 1,350 miles Grotten Sec. 1 road; 4,170 miles Tully Sec. 1 road; 2,700 miles Dryden Sec. 2 road.—Henry A. Van Alstyne, State Engineer, Albany, N. Y.

Cortland, N. Y.—Bids will be received, June 28, for improving 2,640 miles of Old State road.—Henry A. Van Alstyne, State Engineer and Surveyor, Albany, N. Y.

Elizabethtown, N. Y.—Bids will be received, June 28, for improving 2,640 miles of Old State road.—Henry A. Van Alstyne, State Engineer and Surveyor, Albany, N. Y.

Elmira, N. Y.—Bids will be received, June 29, for improving 4,512 miles Wellsville road; 1,486 miles Grand Central avenue; 9,200 miles Erin-Horseheads road.—Henry A. Van Al-

styne, State Engineer and Surveyor, Albany, New York.

Fonda, N. Y.—Bids will be received, June 28, for improving Northampton road, consisting of 700 miles of work.—Henry A. Van Alstyne, State Engineer and Surveyor, Albany, N. Y.

Fonda, N. Y.—Bids will be received, June 29, for 2,200 miles Amsterdam-Hagaman road; 2,860 miles Saulwaters Corner road; 1,130 miles De Graff Corners road; 2,340 miles Minaville-Scotch Bush road; 2,000 miles Fonda-Berryville road; 2,210 miles Fonda-Tribes Hill road.—Henry A. Van Alstyne, State Engineer and Surveyor, Albany, N. Y.

Goshen, N. Y.—Bids will be received, June 28, for improving Woodbury-Central Valley road, comprising 3,480 miles of work.—Henry A. Van Alstyne, State Engineer and Surveyor, Albany, N. Y.

Herkimer, N. Y.—Bids will be received, June 28, for improving 1,640 miles of Frankfort-East Schuyler road.—Henry A. Van Alstyne, State Engineer and Surveyor, Albany, N. Y.

Herkimer, N. Y.—Bids will be received, June 29, for improving 1,890 miles Frankfort-Utica Sec. 2 road; .350 miles Poland-Cold Brook road.—Henry A. Van Alstyne, State Engineer and Surveyor, Albany, N. Y.

Herkimer, N. Y.—Bids will be received, June 30, for improving 5,390 miles East Creek road; 5,320 miles Little Falls road; 3,690 miles Frankfort road; 5,530 miles Deerfield road; 6,300 miles Middleville road.—Henry A. Van Alstyne, State Engineer, Albany, N. Y.

Hudson, N. Y.—Bids will be received, June 29, for improving 1,100 miles Stockport-Hudson road.—Henry A. Van Alstyne, State Engineer and Surveyor, Albany, N. Y.

Hudson, N. Y.—Bids will be received, June 30, for improving 3,740 miles Chatham-Spencertown road.—Henry A. Van Alstyne, State Engineer, Albany, N. Y.

Ithaca, N. Y.—Bids will be received, June 29, for 3,165 miles Cayuga Heights road; 1,382 miles Catskill turnpike.—Henry A. Van Alstyne, State Engineer and Surveyor, Albany, N. Y.

Ithaca, N. Y.—Bids will be received, June 30, for improving 3,660 miles Ithaca road; .340 miles Wyckoff road; 4,440 miles Catskill Sec. 3.—Henry A. Van Alstyne, State Engineer, Albany, N. Y.

Johnstown, N. Y.—Bids will be received, June 28, for improving 2,030 miles of Gloversville-Meco-Phelps road; 4,670 miles Johnstown-Kecks Center road; 2,020 miles Gloversville-Broadalbin road; 3,140 miles Old Plank road.—Henry A. Van Alstyne, State Engineer and Surveyor, Albany, N. Y.

Johnstown, N. Y.—Bids will be received, June 29, for improving 2,220 miles Tribes Hill road.—Henry A. Van Alstyne, State Engineer and Surveyor, Albany, N. Y.

Kingston, N. Y.—Bids will be received, June 28, for improving 5,660 miles Saugerties-Kingston road; 6,930 miles Kingston-High Falls road; 8,270 miles Kingston-Ellenville Sec. 1 road, and 6,890 miles Post road.—Henry A. Van Alstyne, State Engineer and Surveyor, Albany, N. Y.

Kingston, N. Y.—Bids will be received, June 29, for improving 7,420 miles Ellenville Sec. 2 road.—Henry A. Van Alstyne, State Engineer and Surveyor, Albany, N. Y.

Lake George, N. Y.—Bids will be received, June 30, for improving 7,560 miles Glen Falls road; 9,740 miles Bolton Landing.—Henry A. Van Alstyne, State Engineer, Albany, N. Y.

Lake Pleasant, N. Y.—Bids will be received, June 28, for improving 3,440 miles of Speculator road.—Henry A. Van Alstyne, State Engineer and Surveyor, Albany, N. Y.

Lockport, N. Y.—Bids will be received, June 28, for improving 3,147 miles of Griswold street.—Henry A. Van Alstyne, State Engineer and Surveyor, Albany, N. Y.

Lockport, N. Y.—Bids will be received, June 30, for improving 4,680 miles Transit Sec. 3 road.—Henry A. Van Alstyne, State Engineer, Albany, N. Y.

Morrisville, N. Y.—Bids will be received, June 29, for improving 3,287 miles Georgetown road.—Henry A. Van Alstyne, State Engineer and Surveyor, Albany, N. Y.

Morrisville, N. Y.—Bids will be received, June 30, for improving 2,180 miles Eagle Village road.—Henry A. Van Alstyne, State Engineer, Albany, N. Y.

Norwich, N. Y.—Bids will be received, June 30, for improving 4,600 miles North Norwich road.—Henry A. Van Alstyne, State Engineer, Albany, N. Y.

Oswego, N. Y.—Bids will be received, June 28, for improving 2,410 miles Syracuse-Watertown road; 2,480 miles West Oswego river road; 1,660 miles of Sterling road.—Henry A. Van Alstyne, State Engineer and Surveyor, Albany, N. Y.

Oswego, N. Y.—Bids will be received, June 29, for improving .479 miles of Minetto road.—Henry A. Van Alstyne, State Engineer and Surveyor, Albany, N. Y.

Oswego, N. Y.—Bids will be received, June 30, for improving 1,920 miles Phoenix-Pen-

nellville road; 2,090 miles Fulton-Volney road; 2,400 miles Mexico Sec. 1 road.—Henry A. Van Alstyne, State Engineer, Albany, N. Y.

Plains, N. Y.—Bids will be received, June 28, for improving 5,380 miles Peekskill-Salem Sec. 1 road; 4,660 miles Peekskill-Salem Sec. 2 road.—Henry A. Van Alstyne, State Engineer and Surveyor, Albany, N. Y.

Plains, N. Y.—Bids will be received, June 29, for improving 2,801 miles Mohawk River-Floyd road; 4,535 miles Mohawk River-Marcy road; 3,740 miles Mohawk River-Deerfield road; 3,377 miles Augusta road, Augusta section; 2,985 miles Augusta road, Oriskany Falls section.—Henry A. Van Alstyne, State Engineer and Surveyor, Albany, N. Y.

Plains, N. Y.—Bids will be received, June 29, for improving 3,880 miles Peekskill-Salem Center Sec. 3 road; 3,770 miles Peekskill-Salem Center Sec. 4 road.—Henry A. Van Alstyne, State Engineer and Surveyor, Albany, N. Y.

Plattsburg, N. Y.—Bids will be received, June 28, for improving 5,440 miles Plattsburg-Keeseville Sec. 3 road; 7,340 miles Plattsburg-Mooers Sec. 3 road; 4,310 miles Plattsburg-Mooers Sec. 2 road.—Henry A. Van Alstyne, State Engineer and Surveyor, Albany, N. Y.

Poughkeepsie, N. Y.—Bids will be received, June 29, for improving 2,230 miles Pawling-Patterson road; 1,780 miles Millerton road.—Henry A. Van Alstyne, State Engineer and Surveyor, Albany, N. Y.

Poughkeepsie, N. Y.—Bids will be received, June 30, for improving 4,000 miles Hyde Park road; 4,830 miles Amenia-Wassail road; 3,636 miles Sharon Station road; 6,930 miles Pleasant Valley road; 2,910 miles Fishkill road.—Henry A. Van Alstyne, State Engineer, Albany, N. Y.

Riverhead, N. Y.—Bids will be received, June 29, for improving 1,910 miles Crescent avenue.—Henry A. Van Alstyne, State Engineer and Surveyor, Albany, N. Y.

Rochester, N. Y.—Bids will be received, June 28, for improving 2,197 miles of Clifton Sec. 2 road; 2,121 miles Lyell road; 3,107 miles Chilli Sec. 1 road; 2,556 miles Chilli Sec. 2 road; 3,601 miles Little Ridge Sec. 3 road; 3,360 miles Little Ridge Sec. 4 road.—Henry A. Van Alstyne, State Engineer and Surveyor, Albany, N. Y.

Rochester, N. Y.—Bids will be received, June 29, for improving 4,140 miles Barnard's Crossing, Secs. 1 and 2.—Henry A. Van Alstyne, State Engineer and Surveyor, Albany, N. Y.

Schenectady, N. Y.—Bids will be received, June 30, for improving 7,100 miles Guilderland road.—Henry A. Van Alstyne, Albany, N. Y.

Syracuse, N. Y.—Bids will be received, June 29, for improving 1,062 miles South Salina street; .889 miles Cemetery road; 1,000 miles West Lake Sec. 2; 1,000 miles East Lake Sec. 2; 1,765 miles Valley road-Marcellus; 2,319 miles Valley road-Camilus; 2,437 miles Skaneateles Sec. 1; 1,836 miles Callamer road.—Henry A. Van Alstyne, State Engineer and Surveyor, Albany, N. Y.

Syracuse, N. Y.—Bids will be received, June 28, for improving 1,212 miles Coleman Hill Sec. 1 road.—Henry A. Van Alstyne, State Engineer and Surveyor, Albany, N. Y.

Syracuse, N. Y.—Bids will be received, June 30, for improving 2,829 miles Thompson road; 1,716 miles Jordan Valley Sec. 1; 2,504 miles Spafford road; 3,526 miles Cicero-South Bay road; 3,370 miles West Lake Secs. 3, 4 and 5; 3,660 miles Elbridge road.—Henry A. Van Alstyne, State Engineer, Albany, N. Y.

Troy, N. Y.—Bids will be received, June 28, for improving 3,100 miles of Brunswick turnpike; 3,610 Averill Park-Crooked Lake road; 3,540 miles Nassau-Brainard road; 4,750 miles Rensselaer-Best road; 3,720 miles Troy-Sand Lake Sec. 2 road.—Henry A. Van Alstyne, State Engineer and Surveyor, Albany, N. Y.

Utica, N. Y.—Bids will be received, June 28, for improving 8,53 miles Utica-Oneida Castle road, Sec. 1; 8,53 miles Utica-Oneida Castle road, Sec. 2.—Henry A. Van Alstyne, State Engineer and Surveyor, Albany, N. Y.

Utica, N. Y.—Bids will be received, June 30, for improving 3,875 miles Augusta-Vernon Center road; 5,100 miles Lewell Spencer sections.—Henry A. Van Alstyne, State Engineer, Albany, N. Y.

Watertown, N. Y.—Bids will be received, June 28, for improving 6,891 miles of Adams-Henderson Sec. 2 road; 2,225 miles of Watertown-Sackett's Harbor-Henderson Sec. 2 road; 4,188 miles of Redwood-Alexandria Bay Sec. 2 road; 1,450 miles Sackett's Harbor road; 5,086 Henderson Harbor road.—Henry A. Van Alstyne, State Engineer and Surveyor, Albany, N. Y.

Watertown, N. Y.—Bids will be received, June 29, for improving 4,193 miles Theresa Sec. 3; 1,602 miles Adams Sec. 1; 3,158 miles Adams Sec. 2; 4,047 miles State Sec. 2; 5,466 miles Carthage Sec. 2.—Henry A. Van Alstyne, State Engineer, Albany, N. Y.

Bowling Green, O.—Bids will be received, July 2, for constructing 50 miles of crushed

stone road.—E. L. Spofford, County Engineer.

Cincinnati, O.—Bids will be received, July 2, for improving Lehman road, from Considine avenue to Blanchard avenue.—M. J. Keefe, Clerk, Board of Public Service.

Cleveland, O.—Bids will be received, July 7, for laying pipe at driveways along State road No. 3; also for completing the Depot road improvement.—Julius C. Dorn, Clerk, Board of Commissioners; W. H. Evers, County Engineer.

Dallas, N. C.—The contract for grading 21 miles of road in Gaston county has been awarded the Probst Construction Company, Charlotte.

Delaware, O.—Bids will be received, July 11, for improving the Lewis and Shoemaker road.—E. S. Mendenhall, County Surveyor.

Hamilton, O.—Eaton road will be paved with sheet asphalt, brick or bituminous macadam.

Kenton, O.—The contracts for the Pike road have been let to Raymond and Co., Galion, at \$2,181, and to D. R. McArthur Company.

Youngstown, O.—The contract for the Austintown road has been sublet to the Howley Construction Company, at \$43,000.

Westerville, O.—The State Road Commission has decided to improve the Westerville road.

Clinton, Tenn.—Bids will be received, July 2, for macadamizing Pike road, about thirteen miles.—W. L. Owen, Secretary, Pike Commissioners.

Chehalis, Wash.—The contract for about ten miles of the Cowlitz Pass State road has been awarded the Tacoma Bridge Company, S. Bertleson, Representative, at about \$20,000.

Clarksburg, W. Va.—A road will be built to Webster Spring by the Gassaway, Elk River and Huttonville Railway Company.—T. M. Jackson, E. B. Carlin and J. M. Hoover, Incorporators.

Wheeling, W. Va.—Bids were opened, June 23, for about 1,730 cubic yards of macadam roads in Triadelphia district, 1,230 cubic yards in Richland district, 1,845 cubic yards in Liberty district, 325 cubic yards in Ritchie district, and 740 cubic yards in Cumberland road.

SEWERAGE

Birmingham, Ala.—An election will be held to decide the question of issuing \$7,000 sewer bonds.

Douglas, Ariz.—An election was held, June 22, to vote on the question of issuing sewer bonds.

Fayetteville, Ark.—Arrangements are being made to install a sewer system.—J. W. Masengale, Secretary of Commercial League.

San Francisco, Cal.—It is estimated that the cost of sewer repairs will be \$78,000, beside the \$340,000 sewer work being done under the bond issue.—City Engineer Woodward.

Norman Park, Ga.—An election will be held to decide the question of issuing \$15,000 bonds for sewers, waterworks and school buildings.

Paducah, Ky.—Ordinances are before Council for laying sewers on Washington, First and Second streets.—L. A. Washington, City Engineer.

Duluth, Minn.—Sewer improvements on Genesol street have been asked.

River Rouge, Mich.—Bids for the \$150,000 sewer bonds have been rejected and will be readvertised.

Las Cruces, N. M.—A dam will be built in connection with the Elephant Butte irrigation system.—C. C. Grunsky, W. H. Saunders, W. W. Follett, J. L. Read and B. M. Hall, Consulting Engineers.

Akron, O.—The estimated cost of the Wolf Ledge sewer is \$33,322.

Cincinnati, O.—The citizens of Oakley have asked for an election, July 14, to vote on the issue of \$7,500 sewer bonds.

Painesville, O.—Bids will be readvertised for the South street sewer.

Salem, O.—Bids will probably be readvertised for the Jennings avenue sewer.

Oklahoma City, Okla.—Plans are being prepared for a sewer system in Walker avenue.

North Wales, Pa.—A sewer system will probably be constructed.

Sharon, Pa.—An election will be held to decide the question of issuing \$70,000 sewer and fire-protection bonds.

West Chester, Pa.—Plans have been completed for a sewer system, to cost \$342,000.—F. A. Barbour, Sanitary Engineer.

Covington, Tenn.—An election will be held, July 17, to vote on the question of issuing \$15,000 sewer bonds.—Samuel Lancaster, Jackson, Engineer; J. A. Green, Assistant Engineer.

Marlington, W. Va.—An election will be held, July 1, to vote on the question of issuing sewer bonds.—T. S. McNeel, Mayor.

Picton, Ont., Can.—A sewer system will probably be constructed.

PROPOSED WORK

Norwich, Conn.—The Council proposes to expend \$6,000 for sewers in West Main street.

Washington, D. C.—A sewer will be constructed in Columbia road.—Thomas L. Hicks, Director, Public Works.

Libertyville, Ill.—Bids will be received for constructing sewer system.—Board of Local Improvement.

Marshalltown, Ia.—Two sewers will be constructed.

Adrian, Mich.—An issue of \$70,000 sewer bonds has been voted.

Fergus Falls, Minn.—Bids are asked for constructing the Erhard-Telican-Maplewood-Lita ditch, comprising one large ditch and a system of twelve small ones.

Owosso, Mich.—It is proposed to construct a sewer system.

M'Cook, Neb.—It is proposed to issue sewer bonds.

Albany, N. Y.—An ordinance has been passed authorizing a sewer to be built in Washington street.—Alderman La Grange.

St. Johnsville, N. Y.—The citizens have voted to issue \$32,000 bonds for sewer construction.

Columbus, O.—An ordinance has passed Council appropriating \$25,000 for seweraging Sixth street.

Girard, O.—Resolutions have been passed to lay sewers in districts 1 and 2.

Toledo, O.—A resolution has been passed for constructing a sewer in Monroe Valley and Vinton streets.

Wellington, O.—A sewer will be constructed in Courtland avenue.—W. L. Carpenter, Clerk.

Altoona, Pa.—Extensive sewer work has been decided upon.

Harrisburg, Pa.—An appropriation of \$55,000 has been made for extending sewers on the Hill.—E. Z. Gross, Mayor.

Huntington, W. Va.—About \$45,000 will be expended for sewers.—H. W. Blass, City Clerk; John Coon, Chairman, Committee.

CONTRACTS TO BE AWARDED

Trinidad, Col.—Bids will be received, July 2, for furnishing material and constructing 24 miles of pipe line.—I. Q. Milliken, City Clerk.

Des Moines, Ia.—Bids will be received, July 2, for a vitrified clay pipe sewer on Kingman boulevard.—W. W. Wise, J. W. Campbell, Board of Public Works.

Fort Leavenworth, Kan.—Bids will be received, July 10, for repairs and alterations to sewage filtration plant.—Capt. J. E. Noe-mayle, Quartermaster.

Madison, Wis.—Bids will be received, July 13, for constructing about two and one-half miles of sewers.—John F. Icke, City Engineer.

Fairbury, Neb.—Bids will be received, July 10, for constructing 5,875 feet of 10-inch, and 2,700 feet of 8-inch sanitary sewers, manholes and flush tanks.

Norfolk, Neb.—Bids will be received, June 29, for constructing a sewer system.—Julius Huliff, City Clerk.

Saranac Lake, N. Y.—Bids will be received, July 2, for constructing sewers.—S. A. Miller, Clerk.

Ashtabula, O.—Bids will be received, July 10, for improving Superior street by constructing 484 feet 8-inch sewer, also sewers on Hiawatha street, Adams, Washington and Baker streets.—A. J. Richardson, Clerk.

Cleveland, O.—Bids will be received, July 12, for constructing the main intercepting sewer.—A. R. Callow, Secretary, Board of Public Service.

Medford, Ore.—Bids will be received, June 30, for constructing a sewer in district 3.—J. E. Taft, City Recorder.

Lancaster, Pa.—Bids will be received, July 19, for constructing 3,600 feet of reinforced concrete sewer.—F. H. Shaw, Engineer; Charles G. Barker, Clerk.

Williamsport, Pa.—Bids will be received, June 29, for constructing a sewer on Andrews Place.—J. J. Galbraith, City Clerk; James F. Fisher, City Engineer.

CONTRACTS AWARDED

Birmingham, Ala.—The contract for installing a branch line of trunk sewers has been awarded C. M. Burkhalter, at \$9,253.

Gadsden, Ala.—The contract for constructing nine miles of sewers has been awarded the West Construction Company, Chattanooga, Tenn., at \$27,700.78.

St. Helena, Cal.—The contract to construct a sewer in Stockton street has been awarded J. H. Steres Hardware Company.

Bridgeport, Conn.—Bids were opened, June 20, for the Noble avenue sewer.—Patrick Kennedy, Director of Public Works.

West Batavia, Ill.—The contract for constructing a sewer system has been let to W. N. Dearborn Company, Stone City, Ia., for \$47,770.

Foxcroft, Me.—Bids were opened, June 25, for constructing a sewer system.—Board of Selectmen.

Peabody, Mass.—The contract for sections 3 and 4 sewer has been awarded Geo. M. Byrne Co., Boston, at \$28,000.

Grand Rapids, Mich.—The contract for the Soldiers' Home sewer was awarded Cronin and Rober, at \$9,152.52.—City Engineer Anderson.

Kansas City, Mo.—The contract for the sewer system in the section between Thirty-first street and Armour boulevard, Locust street and Campbell street, has been awarded W. C. Mullins, at \$37,942.42.

Columbus, O.—Bids were opened, June 19, for \$26,000, 4 per cent., sewer repair bonds; also \$279,000, 4 per cent., sewerage dam bonds.—Martin Gemuender, Secretary Trustee of Sinking Fund.

Lancaster, O.—The contract for the sewer in W. Fifth avenue has been let to C. R. McCracken and Company, at \$8,841.

Painesville, O.—Contracts for constructing sewers have been awarded as follows: Liberty street, C. H. Stocking, \$4,071; Erie street, Lake Erie Concrete Co., at \$2,216.

Ontario, Ore.—The contract for the \$26,000 sewer system has been awarded Baisdel and Co., of Butte, Mont.

Meyersdale, Pa.—The contract for sewers on Broadway has been let to G. H. Duncombe at \$4,320.

Dell Rapids, S. D.—Bids were opened June 20 for constructing a sewer.—O. F. Bowles, Mayor.

WATER SUPPLY

Pine Bluff, Ark.—The council will purchase the waterworks plant.—W. J. Parkes, City Engineer.

Breckenridge, Col.—Plans are being made to build two reservoirs to cost \$750,000.

Hazelhurst, Ga.—Arrangements are being made to secure water supply by sinking artesian wells.

Vienna, Ga.—Plans and specifications are being prepared by Arthur Pew, Atlanta, for a waterworks plant to cost \$20,000.

Elgin, Ill.—Water meters will probably be installed.

Springfield, Ill.—An ordinance is being prepared for the appropriation of \$150,000 waterworks bonds.

Caney, Kan.—An election will be held July 9, to decide the question of reconstructing the waterworks plant at a cost of \$30,000.—M. E. McMillan, City Clerk.

Boston, Mass.—Mayor Fitzgerald recommends an appropriation of \$300,000 for water service improvements.

Chihuahua, Mex.—A dam will be built on the Churiscar river to secure a water supply. Cost \$300,000.—Sr. Moroquin, engineer.

Hubbell, Mich.—Plans are under way to establish a waterworks system at Traverse Bay and to pump water to Hubbell.

Brookhaven, Wis.—The extension of water and electric light mains is under consideration.

Sutton, Neb.—An election will be held to decide the question of issuing \$5,000 waterworks bonds.

Haledon, N. J.—A municipal water supply will be secured for Manchester Township, by constructing a reservoir at a cost of \$50,000.

Seneca Falls, N. Y.—Plans and specifications will be prepared by Jos. B. Rider, South Norwalk, for a municipal waterworks plant to cost \$110,000.—E. L. Guion, clerk.

May's Landing, N. J.—An election will be held, July 10, to decide the question of issuing \$25,000 bonds for waterworks.

Cincinnati, O.—The citizens of Oakley have asked for a \$4,000 waterworks bond issue.

Hubbard, O.—Plans are under way to secure a waterworks plant.

Jefferson, O.—The plans for improving the water system, provides 30 hydrants for fire protection.

Ponca City, Okla.—An election will be held to decide the question of issuing \$22,000 bonds for improving water and sewer system.

Sweetwater, Tenn.—An election will be held July 7 to decide the question of issuing \$70,000 water and street improvement bonds.

Norfolk, Va.—It is recommended that the bid of Marks and Furgerson of \$61,445 for laying water mains to the Jamestown Exposition grounds, be accepted.

Pulaski, Va.—The city will probably issue \$50,000 waterworks bonds.

Wheeling, W. Va.—An election will be held to decide the question of issuing \$500,000 waterworks bonds.

Egerton, Wis.—It is recommended by Supt. of Waterworks Morrissey that a reservoir be built, with a capacity of 280,000 gallons.

Halleyburg, Ont., Can.—It is probable that a waterworks system will be constructed.

Picton, Ont. Can.—The question of constructing waterworks is under consideration.

PROPOSED WORK

Redlands, Cal.—A reservoir will be constructed by the Domestic Water Company.

Pueblo, Colo.—The Council has passed an ordinance providing for the issue of \$1,000,000 water bonds.

Georgetown, Ind.—A system of waterworks will be installed.

Des Moines, Ia.—Plans have been prepared for a 70,000 gallon steel water tank and a 100-foot tower. Bids will shortly be asked.—Des Moines Bridge and Iron Company, engineers.

Villisca, Ia.—The waterworks system will be extended.

Atoka, I. T.—An issue of \$30,000 waterworks bonds has been voted.

Cushing, La.—Bids will be received for constructing a waterworks system.

South McAlester, I. T.—The citizens have voted \$25,000 for waterworks and sewer extension.—J. M. Gannaway, City Clerk.

Tishonings, I. T.—The waterworks system will be improved.

Sedalia, Mo.—The water and light plant will be rebuilt at a cost of \$10,000.

Albany, N. Y.—Extensive improvements will be made in the filtration plant and bids will be asked.—Isadore Wachsmar, Clerk, Board of Contract.

Niagara Falls, N. Y.—Bids and estimates are asked for a 5,000,000 gallon pump for the Waterworks Department.—W. W. Read, City Engineer.

Cincinnati, O.—Permit has been issued to erect the western pumping station at a cost of \$52,000.—Edward J. Dempsey, Mayor.

Columbus, O.—Bids will be received for constructing the pumping station.—Board of Service.

Springfield, O.—An appropriation of \$2,000 has been made for the purchase of pipe for waterworks extensions.—F. A. Crothers, Clerk of Council.

Swanton, O.—A waterworks plant will be built.

Portland, Ore.—An expenditure of \$7,000 for a brick pump house has been made.

Provo, Utah.—An issue of \$36,000 waterworks bonds has been authorized.

Randolph, Wis.—The citizens have voted to issue \$6,000 water extension bonds.

CONTRACTS TO BE AWARDED

Chicago, Ill.—Bids will be received, July 14, for pile protection for 2-mile and 4-mile cribs.—W. L. O'Connell, Commissioner, Public Works.

Roberts, Ill.—Bids will be received, July 2, for constructing waterworks system.—H. J. Campbell, Chairman, Fire, Water and Light Committee.

Claremore, I. T.—Bids will be received, July 1, for constructing a waterworks and electric light plant to cost \$40,000 or \$50,000.—W. P. Bullock, Kansas City, Mo., engineer.

Garden City, Kan.—Bids will be received, July 6, for constructing deep and shallow wells, suction pipes, pumping station, siphons, concrete lined conduits and fencing.—U. S. Reclamation Service.

Carencro, La.—Bids will be received, July 12, for constructing a waterworks system, according to plans.—George J. Melchoir, Mayor; Ira W. Sylvester, Alexander, Consulting Engineer.

Braintree, Mass.—Bids will be received, July 2, for laying 8,600 feet of water pipe.—Water Commissioners.

Duluth, Minn.—Bids will be received, July 2, for \$375,000 water and light bonds.

Leigh, Neb.—Bids will be received, July 9, for constructing waterworks.—R. J. McNary, clerk.

Laurinburg, N. C.—Bids will be received, July 7, for waterworks and sewer system, bids received June 7, having been rejected.—F. L. Bundy, Mayor.

Tecumseh, Okla.—Bids will be received, July 2, for \$60,000 5-per cent, 30-year waterworks bonds.—R. J. Wax, City Clerk.

CONTRACTS AWARDED

Agawam, Kan.—The contract for furnishing pipe, valves, hydrants, etc., has been awarded R. D. Wood and Co., Philadelphia, Pa., at \$7,000.

Ontario, Ore.—A water system costing \$25,000 will be constructed by Seymour H. Bell.

Clinton, S. C.—The contract for a waterworks system has been awarded Thornwell McMaster, Columbia, at \$28,146.

Jasper, Tenn.—A waterworks system will be constructed here by W. Q. Dinwoody.

PUBLIC LIGHTING

Cartersville, Ga.—An election will be held to decide the question of issuing \$35,000 light and water bonds.—Floyd L. Scales, Mayor.

Bedford, Ia.—J. J. Clark has asked for franchise for an electric system.

Haverhill, Mass.—Improvements in the electric-light system are asked.—Roswell L. Wood, Mayor.

Minneapolis, Minn.—The citizens will vote on the question of issuing \$1,500,000 bonds for purchasing the plant of the Minneapolis Gas and Light Company.

Rush, Minn.—An election will be held to decide the question of issuing \$12,000 municipal electric-light bonds.

Brookhaven, Miss.—It is probable that the waterworks and electric-light plant will be remodeled, at a cost of \$30,000.

Bertrand, Neb.—The question of constructing a gas plant is under consideration; W. S. Darley and J. M. Roberts have petitioned for franchise.

Burlington, N. J.—A municipal electric-light plant is under consideration.

Williamson, N. Y.—Electric-light and power will be furnished by the Williamson Light and Power Company.

Grand Forks, N. D.—An electric-light franchise has been granted to Edward L. Healy.

Andover, O.—An electric-light plant will be constructed.—F. A. Woodward, Clerk.

Columbus, O.—Plans are under way to install an electric-light system at the barracks.—Capt. Chamberlain, Quartermaster.

Ontario, Ore.—The Idaho Light and Power Company has been granted a 10-year electric-light franchise, and will supply Weiser, Payette and New Plymouth, in Idaho, with light.

Charleston, S. C.—It is probable that a dam will be built over Goose creek by the Light and Water Company.

Cleburne, Tex.—A subscription is being taken to secure a fire engine.

PROPOSED WORK

Social Circle, Ga.—An issue of electric-light bonds has been voted.

Quincy, Ill.—The Quincy Gas, Electric and Heating Company will improve its plant, at a cost of about \$12,000.—H. O. Shannon.

Cherryvale, Kan.—An expenditure of \$50,000 will be made for improving the electric-light and power plant.

Cherryvale, Kan.—Bids will be received for \$25,000 electric-light bonds.—Charles T. Fertig, 29 North Tejon street, Colorado Springs, Col., for the Cherryvale Electric Light and Power Company.

Marquette, Kan.—A waterworks and electric-light plant will be constructed, at a cost of \$12,000.

Winona, Minn.—The Minnesota Light and Power Company has increased its capital \$75,000 to \$200,000, and will make improvements.

Crete, Neb.—It is proposed to improve the electric-light plant, and will receive bids for a 50 to 90-horsepower engine and generator.—L. C. Dredla, City Clerk.

University Place, Neb.—It is proposed to issue electric-light bonds.

Sprague, N. C.—An electric-light plant will be installed by B. F. Mebane and M. G. Wilson.

Potsdam, N. Y.—An issue of \$24,000 electric-light bonds has been voted.

Carmen, Okla.—An electric-light plant will probably be installed.

Kutztown, Pa.—It is proposed to expend \$10,000 to enlarge the electric-light plant.

Tiverton, R. I.—An electric-light plant will be constructed by the Tiverton Light and Power Company.

Beloit, Wis.—The Beloit Water, Gas and Electric Company has received a 10-year contract for street lighting.

Milwaukee, Wis.—An ordinance has been passed to issue \$150,000 municipal lighting bonds.

CONTRACTS AWARDED

Danville, Ky.—The contract for an electric-light plant has been let to E. O. Nelson, at \$6,500.

Albany, N. Y.—The contract for installing an electric-light plant in the basement of the Capitol has been awarded W. W. Sheehan and Company, of New York, for \$43,100.

FIRE EQUIPMENT AND SUPPLIES

Palms, Cal.—Arrangements are being made to establish a light and water system.

Washington, D. C.—Fire Chief Wm. T. Bell recommends organizing a new company and the purchase of a steamer.

Paducah, Ky.—The Fire Chief recommends the purchase of additional hose.

Haverhill, Mass.—It is recommended by Chief Engineer Gordon that engine No. 3 be repaired.—Alderman Smith, Councilmen Fore and Lord, Fire Committee.

Barberton, O.—Arrangements are being made to purchase hose.

Benwood, O.—Plans are under way to secure better fire protection and the purchase of a chemical engine.

Oll City, Pa.—Plans have been prepared for erecting a fire station.

Chattanooga, Tenn.—An appropriation for fire halls will be asked.—T. J. Gillespie, City Treasurer.

PROPOSED WORK

Little Rock, Ark.—Improvements in the Fire Department have been ordered; 2,000 feet of hose will be purchased and \$25,000 will be spent on general improvements.

New Britain, Conn.—Extensive improvements have been made in the Fire Department; a fire-alarm bell and two horses have been purchased, and a chemical engine and a chief's wagon will be purchased.—P. J. Egan, Clerk.

Norwich, Conn.—The Council has appropriated \$4,000 for the purchase of a fire engine.

Peoria, Ill.—A fire company will be organized and a hose cart and hose will be purchased.

Wethersfield, Ill.—A hook and ladder truck will be purchased.—E. E. Johnson and Louis O'Toll, Committee.

Wichita, Kan.—A fire engine house will be erected; bids will be advertised.—City Clerk Dow.

Belfast, Me.—Two ladders 25 feet and one 15 feet, eighteen rubber coats and apparatus will be purchased for the Seaside Hose Company.—Selwyn Thompson, Chairman, Committee.

Lawrence, Mass.—An engine house will be erected, at a cost of \$20,000.

Osceola, Mich.—It is proposed to furnish fire equipment.

North Hudson, N. J.—A steam fire engine will be purchased.

Albany, N. Y.—The Fire Department will purchase twelve nozzles to replace those now in use.—Commissioner Cantine.

Geneseo, N. Y.—Bonds will be issued for fire protection, an engine house and for purchasing hose.

Lowell, N. Y.—A hose wagon will be purchased.—Chief Sherwood.

Sharon, Pa.—Bonds have been issued for a Fire Department building.

Milwaukee, Wis.—An ordinance has been passed to issue \$100,000 Fire Department bonds.

High River, Alta., Can.—A gasoline fire engine, to cost \$3,500, will be purchased.—W. E. G. Holmes, Town Clerk.

Winnipeg, Man., Can.—A fire hall will be erected, at a cost of \$20,000.

CONTRACTS AWARDED

Baltimore, Md.—Bids were opened, June 27, for an aerial hook and ladder truck, a Dahill hoisting device with motor, five 10-inch automatic fire-alarm registers, and two banks of relays.—P. W. Williamson, Secretary of Fire Department.

Detroit, Mich.—Bids were opened, June 25, for furnishing a switchboard, in accordance with specifications.—Geo. W. Stockwell, Secretary of Fire Commission.

New York, N. Y.—The contract for installing a salt-water fire service at St. George Ferry has been let to E. Rutzels Co., for \$25,321.

MUNICIPAL BUILDINGS

Sacramento, Cal.—The proposition to issue \$6,000,000, 3 1/2 per cent., 30-year bonds for repairing State buildings in San Francisco is being considered by the State authorities.

Post Falls, Ida.—The citizens will vote on the question of issuing \$12,000 school bonds.

Olathe, Kan.—It is recommended by the committee that a special tax be levied, for erecting a Courthouse.—D. Hock, Chairman, Committee.

Cynthia, Ky.—Plans have been prepared by C. C. Weber, Cincinnati, O., for a \$100,000 school building.

Bell Air, Md.—The Harford County Court-house Commission has sold \$25,000 bonds to the Harford Mutual Fire Insurance Company.

Maiden, Mass.—It is recommended that a schoolhouse costing \$85,000 be erected in Ward 7.

Centerville, Miss.—Plans and specifications will be received for a schoolhouse, to cost \$12,000.—Dr. J. C. Robert, Mayor.

Joplin, Mo.—All bids have been rejected for the \$45,000 school bonds; bids will be advertised.

Oneida, N. Y.—A special election will be held, July 2, to decide the question of issuing \$11,750 school bonds.

Bellefontaine, O.—An election will be held to decide the question of issuing \$40,000 school bonds.

Columbus, O.—Plans are being prepared for a school building in sub-district No. 2, Liberty township.—E. H. Rickett, Architect.

Columbus, O.—Plans are being made for the proposed West Side Market House improvement, to cost \$15,000.

York, Pa.—No bids were received for the \$75,000 school bonds; they will be readvertised.

Chattanooga, Tenn.—Authority will be asked to issue \$1,000,000 bonds, \$250,000 of which to be used for a City Hall.—T. J. Gillespie, City Treasurer.

Rosebud, Tex.—A vote will be taken on the question of issuing \$12,000 school bonds.

Coleville, Wash.—An election will be held to decide the question of issuing \$20,000 school bonds.

PROPOSED WORK

Mammoth Springs, Ark.—An issue of school bonds has been authorized.—Address G. M. Archer or A. L. Cooper.

Nashville, Ark.—A \$10,000 school building will be erected.

Walnut Ridge, Ark.—Bids will be advertised for a \$15,000 schoolhouse.

Fullerton, Cal.—The citizens have voted \$30,000 school bonds.

San Francisco, Cal.—A bill has passed the Legislature providing \$500,000 for a State building.

Augusta, Ga.—A school building, to cost \$65,000, will be erected in the Fifth ward.

Post Falls, Id.—An issue of \$12,000 school bonds has been voted.

Hammond, Ind.—Bids will be received for slate roof on a school building.—Fred Siegrist, Secretary, Board of Education.

Mill Creek, I. T.—A \$10,000 school building will be erected.

Lawrence, Kan.—It is proposed to erect a Courthouse and jail.

Gibson, La.—A school building will be erected, at a cost of \$12,000.

New Iberia, La.—Two school buildings, to cost \$15,000 each, and a high school building, to cost \$40,000, will be erected.

Chihuahua, Mex.—An appropriation of \$300,000 has been made for a Federal building.

Gladstone, Mich.—The citizens have voted to issue school bonds.

Jerome, Mich.—The citizens have voted to issue \$7,000 school bonds.

Prentiss, Miss.—An issue of \$50,000 Court-house bonds has been voted by Jefferson Davis county.

McCook, Neb.—An issue of \$36,000 school bonds has been authorized.

Bath, N. Y.—The citizens have voted to issue \$12,000 high school bonds.

Carthage, N. Y.—An appropriation of \$7,000, for heating and plumbing the high school, has been voted.—A. B. Carter, Clerk, Board of Education.

Chatham, N. J.—A municipal building will be constructed, which will contain a fire station.

Carthage, N. D.—An issue of \$6,000 school bonds has been authorized.

Astoria, Ore.—It is proposed to issue \$500,000 Court-house bonds.

Philadelphia, Pa.—An expenditure of \$80,000 will be made for the school at Greene and Carpenter streets, the bid of Lynch and Company, at \$92,000, having been rejected.

Bowman, S. C.—A school building will be erected.

Conway, S. C.—A Courthouse will be erected.

Chattanooga, Tenn.—A school building, to cost \$12,000, will be erected in Ridgedale.—Huntington and De Sabla, Architects.

Cooper, Tex.—An issue of \$13,000 school bonds has been approved.

Corsicana, Tex.—It is proposed to issue \$13,000 school bonds for erecting a building and making improvements.

Forman, Tex.—It is proposed to issue \$50,000 bonds for erecting a Courthouse.

Greenville, Tex.—Bids will be advertised for erecting a schoolhouse.—City Secretary Bowman.

Hillsboro, Tex.—The citizens have voted to issue \$7,000 school bonds.

Junction City, Tex.—The bond issue of \$5,000 for school purposes has been approved by the Attorney General.

Laredo, Tex.—An appropriation of \$507,000 for public buildings has been made.

Malone, Tex.—A \$7,000 school bond issue has been voted.

Marshall, Tex.—A City Hall will be erected; a site has been selected.

Provo, Utah.—The proposition to issue \$36,000 school bonds carried.

Yoakum, Tex.—Additions to two schools will be constructed.—Address Secretary of School Board.

Innisfail, Alta., Can.—A Town Hall, costing \$23,000, will be erected.

Cranbrook, B. C.—A Courthouse will be erected, to cost \$50,000.

Winnipeg, Man., Can.—An expenditure of \$200,000 has been authorized for school improvements.

Belleville, Ont., Can.—A House of Refuge will be constructed, to cost \$31,000; contract awarded to Walter Alford.

Montreal, Que., Can.—A market house will be constructed, at a cost of \$15,000.—Chairman, Finance Committee.

BRIDGES

Pine Bluff, Ark.—Arrangements are being made for constructing the following bridges: A 234-foot bridge at Vinegar Hill; a 375-foot bridge at Flat bayou; a 160-foot bridge across Little Sallie bayou; a 110-foot bridge across Big creek; a 160-foot bridge across Eastwood bayou, and an 80-foot bridge across arm of Eastwood bayou.

Washington, D. C.—A bill has been introduced by Representative Steenerson to authorize a pontoon bridge to be constructed across the Red River of the North by the town of Oslo, Minn.

Weston, Mass.—It is probable that a bridge will be built.—Irving T. Farnham, City Engineer.

Grand Rapids, Mich.—A plan is under way to operate the Wealthy avenue drawbridge by electricity.—City Engineer Anderson.

Marshall, Mich.—An election will be held to decide the question of issuing bridge bonds for a bridge across the Kalamazoo river.

Stillwater, Minn.—The Wisconsin Central will probably build a bridge.—Chas. N. Kalk, Chief Engineer, Milwaukee, Wis.

Jackson, Miss.—Action will be taken on the proposition to construct a steel and iron bridge across Pearl river.—Board of Trade.

Binghamton, N. Y.—Plans have been completed for repairing the Court street bridge.—S. F. Jaques, Assistant City Engineer.

Canisteo, N. Y.—An election will be held to vote on the question of building a bridge over the Canisteo river, at a cost of \$2,000.

Miamisburg, O.—The Capital Construction Company, Columbus, are the lowest bidders for the Sunfish aqueduct, at \$2,485.

Toledo, O.—Plans are being prepared for a steel bridge in Lucas county, by the Osborne Engineering Company, Cleveland, cost \$10,000.

Willow Grove, Pa.—A bridge has been asked for by Douglas township.

GARBAGE AND WASTE DISPOSAL

Chicago, Ill.—The contract for garbage disposal has been awarded to George D. Hopkins, at \$18,000 per year, for a period of five years.—Wm. O'Connell, Commissioner of Public Works.

Detroit, Mich.—Bids were opened, June 19, for garbage collection equipment.—Geo. P. Codd, Mayor; J. J. Haarer, Commissioner, Department of Public Works.

STREET RAILWAYS

San Pedro, Cal.—Surveys have been made for an electric line to White's Point.—Wm. G. Kerchoff, Representative.

Colorado Springs, Col.—The Colorado Springs Interurban Railway has been granted a 25-year franchise for a line on the East Side.

Battle Creek, Mich.—The traction company has asked for authority to place its wires underground.

Detroit, Mich.—An electric line is projected to Saginaw, via Bancroft, Hartland and Owosso.

Grand Rapids, Mich.—The Grand Rapids-Muskegon Power Company has purchased an island in Grand river on which to erect a steel tower to carry the wires across the river.

Kalamazoo, Mich.—It is probable that an electric line will be built to South Bend, via Three Rivers.

Fond du Lac, Wis.—The Eastern Wisconsin Electric Railway and Light Company has secured right of way through the fair grounds.

PARKS

Washington, D. C.—The statue of Gen. McClellan will be erected in the government reservation on Columbia road, in front of the Highlands.—Secretary William H. Taft, Senator G. P. Wetmore and General Horatio C. King, Commission.

IN THE MARKET

AT HOME

N. W. Dunham, general manager, Somerville Development and Improvement Co., Somerville, Texas, wants drying, bolting, fanning machinery for preparing Fuller's earth for market.

J. W. English, Atlanta, Ga., wants electric elevators.

G. L. Hinson, Hazelhurst, Ga., wants roofing to cover building 80 x 140 ft.

The Patsitiga Sand Co., Macon, Ga., wants a 20-horsepower gasoline, double drum hoisting engine.

Pensacola Cement Stone Co., Pensacola, Fla., wants one complete gravel dredging outfit suitable for dredging 20 feet below boat and elevating 10 feet above. Also gasoline engine, storage battery and lighting plant of 32 lamps.

Southern Ferro-Concrete Co., Atlanta, Ga., wants a second-hand concrete mixer, with hoisting apparatus attached.

Southern Manufacturing Co., 517 Equitable Building, Baltimore, Md., wants a new and second-hand concrete mixer with power.

Weatherford Gaslight, Heat and Power Co., Weatherford, Texas, wants electrical equipment.

W. B. West, 608 North Seventeenth street, Richmond, Va., wants all kinds of building materials.

H. M. Dawson, Ocean City, Md., wants 50,000 pounds braces and bolts, copper or composition tacks suitable to drive in knots or piling to keep out salt water worms.

W. M. Haggard, president Pickens Mill, Easley, S. C., wants fire protection equipment.

City of Orangeburg, S. C., wants an engineer to prepare plans for a modern sewerage system. Address L. H. Wannaker, city treasurer.

R. L. Purnell, Ocean City, Md., wants machinery for artificial building material.

J. L. Rawlings, secretary, Burning Springs Natural Gas Co., Burning Springs, Ky., wants a contracting engineer to estimate and bid on pipe line to London, Ky.

ABROAD

ITALY.—An engineering firm wants prices and particulars as to American gas engines. They also want gasoline and kerosene motors of from $\frac{1}{2}$ to 4 horsepower. Also large gas-power motors from 10 horsepower up. Address No. 156 Bureau of Manufactures, Washington, D. C.

WELLINGTON, NEW ZEALAND.—The City Council proposes to borrow \$1,320,000 for municipal works and will want machinery for an electric-lighting plant. Address No. 151 Bureau of Manufactures, Washington, D. C.

ZALAMEA LA REAL, SPAIN.—El Alcide wants bids for supplying the town with electric lights for twenty years. Address No. 151 Bureau of Manufactures, Washington, D. C.

For Machines to Drill, Blast and Test Holes and Water Wells, write "LOOMIS CO., TIFFIN, O."

High Grades
of

PURE ASPHALT

California Asphaltum Sales Agency

The "Maltha" Brand

San Francisco Chicago New York London
JOHN BAKER, Jr., Manager

Utilities, Trade Notes and News

ALCOHOL IN INDUSTRIES.—The Committee of Manufacturers, 21 William street, New York City, which for three and a half years has been working for the exemption of alcohol used in the arts from prohibitive taxation, will preserve its organization with a view to further protection of manufacturers in the administration of the new law.

DIRECTORY OF METAL TRADES.—David Williams Co., 14 Park place, New York City, publishes the tenth annual edition of the Iron Age Directory, a classified list of the names of manufacturers who are advertisers in the *Iron Age*, as well as of the articles manufactured.

ILLUMINATING ADVERTISING.—The Denver Gas and Electric Co., Denver, Col., publishes a book of "Boosts" of newspaper clippings. Attention is called to the value to Denver of the elaborate scheme of illumination employed in welcoming the Grand Army crowds last year. The extent to which lighting is ordinarily carried there is giving to the city the name "City of Lights."

JAMESTOWN EXPOSITION.—The Jamestown Exposition Co., Norfolk, Va., issues a booklet, "The Tidewater Cities of Hampton Roads," which describes and illustrates the towns in the vicinity of Norfolk, as well as the features of the Exposition which will open April 26, 1907.

LARGE GAS ENGINE.—The Allis-Chalmers Co., Milwaukee, Wis., has received an order for four 3,000-horse-power gas engines for the Carnegie Steel Works at Homestead, Pa.

LIGHTNING ARRESTER.—The General Electric Co., Schenectady, N. Y., in Flyer No. 2177 describes a lightning arrester with some decidedly new characteristics for the season of 1906.

MUNICIPAL ADVERTISING.—The Council Bluffs, Iowa, Commercial Club issues a hanging poster illustrating a few of the buildings recently completed in that city. The club will supply any information desired regarding terminal facilities, factory sites, etc.

NEWSPAPER DIRECTORY.—The Desbarats Advertising Agency, Limited, Montreal, Can., publish a newspaper directory of Canadian publications. In addition to information regarding character, size and circulation, considerable statistical information in regard to the town in which each is published is also given.

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FOR THE
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AND ENGINEER
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MUNICIPAL PUBLISHING COMPANY
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To Prove that Daus' "Tip-Top" is the best and simplest device for making 100 Copies from pen written and 50 Copies from typewritten original, we will ship complete duplicator, cap size, without deposit on ten (10) days' trial. Price \$7.50 less trade discount 33 1/3% or \$5 net. Daus Building, 111 John Street, N. Y. City

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ANY LENGTH OR QUANTITY
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Four-way adjustable street signs with reinforced steel tube posts and sheet metal perforated signs

These signs are indestructible by the elements, do not rust or corrode, and can be read from a long distance and at any angle you approach them. Adjustable to the intersections, will carry as many signs as are needed for additional intersections. Write for catalogue. We contract with municipalities for signs and house numbering.

AGENTS WANTED in EVERY STATE in the UNITED STATES to REPRESENT OUR LINE. Send for Catalogue.

Perforated house numbers in any finish a specialty

THE AMERICAN STREET SIGN CO.
CLYDE, OHIO

PERCENTAGE WORK.—Frank B. Gilbreth, 34 West Twenty-sixth street, New York City, seems to have beaten the record in advertising, as he often has in construction. A recent issue of an engineering paper had a sixteen-page illustrated advertisement of his, explaining the cost, plus a fixed-sum contract, which has been successful in securing dependable speed in the execution of large enterprises. Handsome illustrations are given of towns, factories, public buildings, power plants and dams. New lines of business require extensive advertising in order to introduce their merits to all possible users.

REFRIGERATING CAPACITY.—The De La Vergne Machine Co., East Thirty-eighth street, New York City, have sold ice machines for use in the United States whose total daily refrigerating capacity is equal to a block of ice as large as the Flatiron Building.

SAND LIME BRICKS.—Charles Warner Company, Land Title Building, Philadelphia, Pa., agent for the Diamond Stone Brick Company, Wilmington, Del., issues a catalogue giving general information and tests of the product and illustrations of German construction using sand lime brick. A small sample brick accompanies the book, which, however, is too small to give one a good idea of the clean cut edges and fine appearance of the commercial product.

STREET LIGHTING.—The Crawford Electric Light Plant, Crawford, Neb., has recently ordered from the Crocker Wheeler Company, Ampere, N. J., two alternating current generators of 120 and 60 KVA, respectively.

INCORPORATIONS

When our readers desire to correspond with any of the following companies, they should address the company itself or a director, incorporator or other official or partner by name to the address (if given) under such name. This will prevent letters being returned and marked "unknown."

ALABAMA

Alabama Stone Company, Lamson. Capital, \$5,000. Incorporators: W. J. Vankish and others.

CONNECTICUT

The Berlin Iron Bridge Company, Hartford. Capital, \$10,000. Incorporators: D. E. Bradley, Berlin; Charles A. Goodrich and Warren D. Chase of Hartford.

Western New York Construction Company, Bridgeport. To construct and operate light and power plants and other public utilities. Capital, \$100,000. Incorporators: G. H. Sellers, A. McCausland, New York City, and W. J. Bagnell, Brooklyn.

ILLINOIS

High Ridge Hydraulic Press Brick Company, Chicago. Capital, \$21,000. Incorporators: Frederic Schoeler, D. S. Roberts and John W. Petesch.

Mertens Brick and Tile Company, Mertens. Capital, \$100,000. Incorporators: John P. Hatch, George W. Jackson and D. G. Lee.

Superior Construction Company, Chicago. Capital, \$25,000. Incorporators: W. H. Chadwick, Wm. Brown, Jr., E. E. Prussing.

Neptune Water Supply Company, Chicago. To manufacture tanks. Capital, \$20,000. Incorporators: B. J. Blackmore, J. M. Laverder, R. Glendenning.

Consolidated Portland Cement Paving Company, Chicago. Capital, \$10,000. Incorporators: F. G. Young, Morris Heaghy and H. E. Miller.

INDIANA

Akron Electric Lighting Company, Akron. Capital, \$5,000. Incorporators: Fletcher Stover, R. R. Carr, A. A. Gast and others.

INDIAN TERRITORY

Caney River Gas Company, Claremont. Capital, \$1,000,000. Incorporators: A. W. Leonard, Randolph Shule and J. H. Evans.

Toll Bridge Company, Muskogee. To build a toll bridge over the Verdigris River. Incorporators: N. A. Gibson and others of Poteau.

Southern Building Company, Tulsa. Capital, \$50,000. Incorporators: J. W. Shackleton, George Middleton and others.

Washita Electric Power Company, Berwyn. To develop a 20,000 horsepower hydroelectric plant. Capital, \$250,000. Incorporators: T. C. Whitfield, Berwyn; E. J. O'Bierne, Atlanta, Ga.; Wm. H. O'Bierne, Gainesville, Texas.

IOWA

Winterset Brick Tile and Material Company, Capital, \$10,000. Incorporators: S. D. Alexander, J. F. Mardis, W. S. Smalley, W. C. Summers.

KANSAS

Wichita Natural Gas Company, Wichita. To build a pipe line from Montgomery. Capital, \$3,000,000. Incorporators: Thomas N. Bardell, Pittsburgh, Pa.; Harry W. Barris, and Albert McBride of Independence, Kan.

KENTUCKY

Snyder Construction Company, Moorhead. Capital, \$10,000. Incorporators: G. Snyder, G. H. Gearhart, H. H. Straw, Clearfield, Pa.; A. J. Levy, Philadelphia; R. K. Winn, Mt. Sterling, Ky.

LOUISIANA

St. Philomena Bridge Co., Ltd., Labadieville; to build an iron bridge across Bayou Lafouche; capital, \$18,000. Incorporators: Eugene Constantine, president; Robert C. Martin, Sr., vice-president; Rev. Augustine Ravoire, secretary-treasurer.

Watson Electric Supply Co., Baton Rouge; capital, \$5,000. Incorporators: S. M. Watson, W. C. Evans, W. W. Jones.

Arcadia Power Company, Arcadia. Capital, \$5,000. Incorporators: J. L. Dalton, A. L. Byron, L. M. Foote.

The New Orleans and Baton Rouge Railroad Company. To construct a line from New Orleans to Baton Rouge. Capital, \$2,500,000. Incorporators: W. O. Orten, C. S. Young, Edward Godechaux, Reve Heimel and F. E. Larue.

MAINE

Red slate Mining Co.; quarrying and dealing in slate; capital, \$100,000. President and treasurer, I. L. Fairbanks; clerk, L. A. Burleigh, Augusta, Me.

Commercial Gas & Electrical Co.; to make and sell gas and electricity; capital, \$2,500,000. President and clerk, M. W. Baldwin; treasurer, C. E. Eaton, both of Portland, Me.

The Consolidated Railway, Electric Lighting & Equipment Company, Capital, \$13,000,000. To deal in gas and electricity and build railroads and steamship lines. Incorporators: Isaac L. Rice, James L. Watson, W. B. Lord, and George W. Hoyt of New York; M. H. Simmons of Hallowell; Lewis A. Burleigh, T. L. Fairbanks, J. Berry and T. E. Chadbourne of Augusta.

Maine Sprinkler Company, Portland. Machinery. Capital, \$10,000. President, M. S. Campbell, Augusta; treasurer, W. W. Carpenter, Portland; clerk, W. J. Knowlton, Portland.

MASSACHUSETTS

Haymarket Construction Company. Dealers in stone, brick, timber, hardware, etc. Capital, \$2,000. President, Henry B. McDowell, Cambridge, Mass.; treasurer and clerk, Henry L. Pulsifer, Boston, Mass.

William G. Doyle Company. To manufacture and deal in sewer pipes, flue linings, fire brick. Capital, \$50,000. President, William G. Doyle; treasurer and clerk, A. D. Page, all of Boston, Mass.

Alton Manufacturing Company, Springfield; to manufacture lighting and heating apparatus; capital, \$1,500,000. Incorporators: C. F. King, of Boston, and others.

MICHIGAN

Detroit, Ypsilanti, Ann Arbor and Adrian Short Line Railway; to build an electric road connecting these cities. Incorporators: Bayard T. Brown, Buhl Block, Detroit; Le Grand Brown, consulting engineer, Rochester, N. Y.

The Manistee River Power Company, Manistee; to develop 16,000 horsepower and supply electricity to Cadillac, Petoskey, Traverse City and intermediate points; capital, \$50,000. Incorporators: D. J. Albertus, president; William Umbler, treasurer.

Northern Light and Power Company, Montrose; capital, \$625,000; to develop water power on the Flint river.

MINNESOTA

Lake Superior Cement Company; capital, \$3,000,000. Incorporators: Alva L. Merritt, J. Wesly Merritt and L. C. Merritt, of Duluth.

Missabe Electric Company, Duluth. Capital, \$250,000. Incorporators: F. B. Spellman, M. A. Spellman, E. M. Morgan, W. G. Crosby.

MISSISSIPPI

Columbus Light and Traction Company, Columbus. Capital, \$150,000. Incorporators: L. Marx and others.

MISSOURI

Freeborn Engineering and Construction Company, Kansas City. Capital, \$50,000. Incorporators: F. W. Freeborn, M. D. McHugh, W. B. Kniskern, and others.

Everstick Anchor Company, St. Louis; to manufacture anchors for telegraph and telephone lines. Incorporators: Jasper Blackburn, J. R. Slifer, Harry Wallbrun, all of Chillicothe, Mo.

NEW JERSEY

Edgewater Basin Company, 1 Exchange Place, Jersey City, N. J. Drydock business, construct buildings, basins, docks, harbors, etc. Capital, \$100,000. Incorporators: Allan C. Washington and William H. Woolverton, New York; William R. Britton, East Orange, N. J.

The Fressler Company, 49 Palisade Ave., Union, N. J. Builders, contractors, etc. Capital, \$150,000. Incorporators: Louise M. Worth, William Fressler, Henry Fressler, all as above.

North Hudson Construction Company, River Road, Woodcliff-on-the-Hudson, N. J. Contractors and engineers, building material. Capital, \$150,000. Incorporators: Julius G. Truelson, Sr., 340 West 46th St., New York; Alfred J. Ellis, Frank C. Gruen, as above.

American Roofing Company, 322 Market St., Camden, N. J.; builders, contractors, decorators, building materials; capital, \$100,000. Incorporators: William S. and M. W. Darnell, George D. Connelly, Camden, N. J.

Atlantic Brick & Ballast Company, 471 Newark Ave., Jersey City, N. J.; contractors, deal in building materials, etc.; capital, \$100,000. Incorporators: E. A. Monfort, Elbert L. Barney, Dr. C. A. Hegeman, New York.

Elba Iron Works, Beverly, N. J.; engineering and construction; capital, \$50,000. Incorporators: Albert E. Eager, Andrew H. Haig, Frank P. Johnson, William W. Hodgson, Charles A. Gillingham, all as above.

N. H. Hart Mining Company, 259 and 93 Spring St., Newton, N. J.; real estate, mining, manufacture building materials; capital, \$125,000. Incorporators: Nathan H. Hart, Frank S. Kauffman, Frank Cook, all of Newton, N. J.

Henderson Realty Company, 405 First St., Hoboken, N. J.; real estate, builders, contractors, etc.; capital, \$25,000. Incorporators: Samuel Ellis, White Plains, N. Y.; Marie Casper and Mark Stone, 405 First St., Hoboken, N. J.; Isidor Tachna, 59 West Houston St., New York.

American Cities Railway & Light Company, 15 Exchange Place, Jersey City, N. J. Capital, \$15,000. Thomas Achenbach, Hackensack, N. J.; Milton Fuerst, 25 Broad St.; A. H. Ford, 24 Broad St., New York.

Granite Construction Company, 419 Market St., Camden, N. J. Builders, contractors, etc. Capital, \$100,000. Incorporators: Samuel L. Kent, Lansdowne, Pa.; Walter L. Rogers, Riverton, N. J.; Stacy B. Lloyd, 328 Chestnut St., Philadelphia.

OHIO

Camp Conduit Company, Akron. To manufacture tile conduits. Capital, \$100,000. Incorporators: H. H. Camp, L. W. Camp, Anna M. Camp, Amelia Camp, Louis W. Camp.

Incandescent Light and Stove Company, Cincinnati. Capital, \$400,000. Incorporators: Joseph Stubbers, George H. Payne, Sherman R. Miller, Jr., and others.

New Lexington Press Brick Company, New Lexington. Capital, \$80,000. Incorporators: B. F. Rogers, C. H. Bell, J. W. McDonald, A. Farlinger, J. W. Fay.

The Union Gas and Electric Company, Cincinnati, and the **Union Gas and Electric Company**, Cleveland. The purposes of the companies are the same, that is, to own and operate public utilities. It is thought they may take over all the railway properties of the Widener-Elkins syndicate. Incorporators: Samuel Rowles, G. Lewis Wands, Rowland White, J. B. White and Charles A. Lied, for \$10,000 each.

OKLAHOMA

Burbank Building and Improvement Company, Burbank. Incorporators: Anthony Carlton, Charles Donovan and I. R. Clark, all of Burbank.

VERMONT

Wilson Brick Company, Windsor. Capital, \$150,000. Incorporators: F. H. Young and A. E. Snow, Springfield, Mass.; Arthur W. Clapp, Brattleboro, Vt.

VIRGINIA

American Asbestos Fireproofing Company, Bedford City, Va. To manufacture fireproof building materials. Capital, \$16,500,000. Incorporators: Webster Blocker, president; A. M. Higgins, vice-president, Terre Haute, Ind.; Mark W. Marsden, general manager.

Eagle Falls Light and Power Company, Clarksville. To develop water power. Capital, \$5,000,000. Incorporators: Henry G. Merry, Baltimore, president; Paul T. Brady, New York City, vice-president; Oliver Todd Smith, New York, secretary.

Engineering Supply Company, Alexandria. Capital, \$50,000. Incorporators: Harry V. Landsdale, J. G. Weigel, G. C. Esher, Alexandria.

Lockville Power Corporation, Lockville, N. C. Capital, \$100,000. Incorporators: W. H. Urquhart, S. D. Crenshaw, T. C. Williams, Jr., S. W. Travers, S. T. Morgan, Richmond.

WASHINGTON

Nome Hydraulic Company, Seattle. Capital, \$10,000. Incorporators: Francis H. Crosby, F. T. Coulter and S. L. Burrington.

Colville and Columbia River Transportation Company, Spokane. Capital, \$250,000. Incorporators: A. Wilkes, W. B. Arris, Ellen P. Gilluly, G. K. Gilluly and H. C. Rice.

Empire Pressed Brick Company, Spokane. Capital, \$25,000. Incorporators: L. R. Demert, R. K. Green and others.

WEST VIRGINIA

The Art Tile, China and Mantel Company, Wheeling. To manufacture tile, brick, cement blocks. Capital, \$10,000. Incorporators: C. A. Wigenter, A. P. Beardsley, J. W. Meyers and H. F. Meyers, Wheeling.

Proposals

Notice to Sewer and Paving Contractors

Fort Smith, Arkansas.

Sealed proposals will be received by the Board of Improvement for Sewer District No. 2 and Paving District No. 5, at their office in Fort Smith, Arkansas, until 2 o'clock P. M. July 18, 1906, for furnishing the necessary labor and materials to construct storm and sanitary sewers in said Sewer District No. 2, and also to construct the brick pavement for said Paving District No. 5.

Said work and improvement to be made in accordance with plans, profiles and specifications therefor, which will be on file and ready for inspection at the office of said Board on and after July 1st.

The approximate quantities of the work upon which bids will be considered are as follows:

Brick Pavement	.....	650,000 Square Yards
Concrete or brick sewer:		
11'-9" to 8'-6" in size	8,300	lineal ft.
8'-0" to 6'-6"	6,000	"
6'-0" to 3'-0"	22,000	"

Vitrified pipe:		
36" to 6"	180,000	"

All necessary manholes, flush tanks, lamp-holes, and catch basins.

Separate proposals must be submitted for the sewer and paving work. Bids for each improvement must be accompanied by a certified check for the sum of \$5,000, made payable to said Board of Improvement, as guarantee that the bidder will, within ten days after the acceptance of his proposal, enter into contract and furnish satisfactory bond for the completion of the work.

The right to reject any or all bids, or to accept any bid, is reserved by said Board of Improvement.

All bidders are advised that a deposit of shale suitable for making paving brick and vitrified sewer pipe is available within the City Limits, that there is also a cheap fuel for burning same and that it is the purpose of the Board of Improvement to allow sufficient time for the erection of plant to manufacture the brick and sewer pipe.

HARRY E. KELLEY,
Chairman of Board of Improvement.

Water Purification Plants

New Orleans, La.

Sealed proposals will be received until 3 o'clock P. M., Wednesday, September 5, 1906, for furnishing and erecting two complete water purification plants—one of 40,000,000 gallons' capacity and one of 4,000,000 gallons' capacity—including excavations, foundations, concrete masonry, reservoirs and filters, head houses, pumping station building, wharf and intake, coal storage, machinery for handling coal, and other mechanical equipment, and all piping and appurtenances complete, ready for operation.

The following are the approximate areas covered by the more important structures:

Pumping station and boiler room	.....	26,750 sq. ft.
Head house	.....	10,200 "
Filters	.....	19,500 "
Seven coagulating reservoirs	.....	488,800 "
Covered clear water reservoirs	.....	161,640 "
Coal and coagulant storage house	.....	6,880 "
Wharf	.....	2,220 "
Length of telephage line	.....	1,160 L. F.

The reservoirs are approximately from 12 to 20 feet deep, mostly of reinforced concrete construction and with concrete lining. Buildings are of concrete and brick. Filters of reinforced concrete.

Specifications, general plans and blank form of proposal may be obtained at the office of the Sewerage and Water Board after July 1. Plans can be seen at once at the office of the Board or at the office of Hering & Fuller, Consulting Engineers, 170 Broadway, New York City.

A certified check on a New Orleans bank, in the sum of \$40,000, deposited in accordance with the terms of the specifications, will be required of each bidder.

A deposit of \$100 will be required for each set of plans and specifications given out, which will be refunded upon the return of said sets in good condition.

A surety company bond, in a company doing business in the State of Louisiana, for an amount equal to 25 per cent. of the gross amount of contract, will be required of the successful bidder.

The right is reserved to reject any or all bids.

F. S. SHIELDS.

GEO. G. EARL, Secretary.

General Superintendent.

Sewers

Seneca Falls, N. Y.

Sealed proposals for building about 12 miles of 6 to 24-inch pipe sewers and appurtenances will be received at the office of the Municipal Board, Seneca Falls, N. Y., until 2 o'clock P. M. of June 28, 1906.

A certified check for \$1,200 will be required with each bid. The successful bidder will be required to furnish a bond in the sum of \$20,000 for the faithful performance of the work. Contractors will be paid monthly approximate estimates in cash, 85 per cent. of the amount due for work at that time done.

Plans may be seen at the office of the Municipal Board or the Engineers and Specifications, Forms of Proposal, Contract, etc., obtained from the Village Clerk.

The right is reserved to reject any or all bids.

By order of the Municipal Board
E. L. GUION,
Village Clerk.

Sewer System

Sealed proposals for furnishing material and constructing a complete system of sewerage in Sewer District No. 1, City of Cape Girardeau, in accordance with the plans and specifications and ordinance No. 729 of said city, providing for constructing said system, will be received by the City Council of the City of Cape Girardeau, Missouri, until 8 o'clock P. M. Monday, July 2, 1906.

The work comprises about twelve miles of pipe sewers, eight to twenty-two inches in diameter, together with all necessary appurtenances.

Plans and specifications are now on file with the City Clerk at Cape Girardeau, Mo., and at the office of the engineer, Nashville, Tennessee.

Printed specifications may be obtained by addressing Geo. E. Chappell, City Clerk, Cape Girardeau, Mo.

The right is reserved to reject any and all bids.

WM. H. COERVER, Mayor,
GEO. E. CHAPPELL, City Clerk,
GRANBERRY JACKSON, C. E., Engineer,
Nashville, Tenn.

Cape Girardeau, Mo., May 15, 1906.

Concrete Dam and Piers

Lancaster, Pa.

Sealed proposals will be received by the Water Committee of Lancaster, Pa., at the office of the City Controller, until 12 o'clock noon, Thursday, July 19, 1906, for building concrete dam and piers at the pumping station.

Plans and specifications can be obtained at the office of the Engineer, F. H. Shaw, 503 Woolworth Building, or at the office of the committee, City Hall.

Each proposal must be accompanied by a certified check for the sum of five per cent. of the amount of the bid, payable to the City of Lancaster.

The committee reserves the right to reject any or all bids.

J. H. RATHFON,
City Controller.

JOHN A. LEINBACH,
Clerk Water Committee.

Pumping Engine

The Department of Public Works of the City of Pawtucket, R. I., will receive sealed proposals for furnishing, delivering and erecting a high-duty pumping engine of a capacity of fifteen million gallons in a new engine room to be constructed by the Department within the city limits. Specifications may be obtained by addressing George A. Carpenter, City Engineer, Pawtucket, R. I., but will be given only to manufacturers of pumping engines of the class and capacity specified above, or their special agents. Proposals are to be filed with the Department stated in the specifications, on or before Monday noon, July 9, 1906.

WILLIAM H. BARCLAY,
Commissioner of Public Works.
PERCY M. BLAKE,
Consulting Engineer,
Pawtucket, R. I., June 6, 1906.

Reinforced Concrete Bridges

Sealed proposals will be received at the County Auditor's office at Jackson, Jackson County, Ohio, for the construction of Thirteen (13) Reinforced Concrete Bridges, until 1 o'clock P. M., June 30, 1906. Estimated cost, about \$5,000.

There will also be let, in the near future, by the County Commissioners of said County, about 550 square yards of Cement Pavement, and about 390 yards of Cement Curb and Gutter.

J. W. TURNER,
County Surveyor.

Wants

Situations Wanted

INSPECTOR.—Of construction; understands brick, stone, reinforced-concrete, steel frame, bridge and dam construction; engage with engineer, architect or owner; first-class reference. KEY, EDWARD LYNCH, Mamroneck, N. Y.

ENGINEER, machinist: German (35); first-class dynamos, Corliss engines, ice machines, absorption system; thoroughly experienced; still employed factory. Address A37, Municipal Journal.

ENGINEER, German, take charge of apartment house; understands dynamos and elevators; owns tools; first-class references. Address A38, Municipal Journal.

ENGINEER, first-class practical mechanic, wishes a position to take charge of business house, factory or hotel; best of references. Engineer, 39 Municipal Journal.

ENGINEER, licensed (48), A1 references, wishes steady day's work; moderate wages. A40, Municipal Journal.

ENGINEER (30), competent mechanic, pipe fitter, electrician; sober; good reference. A41, Municipal Journal.

ENGINEER—Electric, steam, hydraulic; all repairs; tools; private or business building; best license; reference. Address A. Z., Municipal Journal.

ENGINEER, competent, wants position; do firing and repairs. Address A42, Municipal Journal.

EXPERIENCED mechanical draughtsman and designer desires summer position; references. Address M. C., Municipal Journal.

Situations Vacant

DRAUGHTSMAN, practical, competent man on architectural and ornamental bronze and iron work, detailing and layouts; also thoroughly practical man with experience on constructing work in shops. A43, Municipal Journal.

DRAUGHTSMEN wanted, with experience in reinforced concrete work. D. X., Municipal Journal.

DRAUGHTSMAN—Experienced in jig, fixture and tool work. A44, Municipal Journal.

DRAUGHTSMAN, experienced, for building construction and machinery; permanent. A45, Municipal Journal.

ENGINEER—Wanted, first-class engineer; must be thoroughly up in all branches and able to superintend men. A46, Municipal Journal.

ESTIMATOR wanted for general work; carpenter preferred; state salary and reference. Address P., Municipal Journal.

MECHANICAL ENGINEER experienced in our line, to take charge of drafting office; preferably technical man not over 35. Address A535, Municipal Journal.

TIMEKEEPER—For building contractor; must give reference as to honesty; experience not essential. Address A501, Municipal Journal.

WANTED FOREMAN to take entire charge of shop manufacturing speed meters in large lots; to a man who is now employed in similar work and making a success we can offer a permanent position at a good salary; state present position and pay expected; all communications treated confidentially. Address A534, Municipal Journal.

Miscellaneous

FOR SALE—Twenty-four by fifty-four cylinder Corliss engine. For details inquire United States Frumentum Co., Detroit, Mich.

PATENTS SECURED PROMPTLY—Highest references from prominent manufacturers. Write for Inventors' Hand Book. Shepherd & Parker, 512 Dietz Building, Washington, D. C.

One reason why the **Nash Road** (the regular built road) will outlast any other road twice over, is, that it is regular built. **IS THERE ANY OTHER REGULAR BUILT ROAD?**

But there are other reasons, reasons known to and admitted by the ENTIRE PROFESSION OF THE CIVIL ENGINEERS which make it more than twice. HADN'T you better ACQUAINT yourself with these reasons.

ANYBODY can say they have got the best road, but that don't make it so. WHAT REASON is there for the present DEPLORABLE SITUATION in paving affairs?

IF YOU WANT TO KNOW, ask

The **Nash Road**, Borough of Brooklyn, N. Y. City, U.S.A.

THE
CUTLER MAILING SYSTEM
AFFORDS
INVALUABLE MAIL SERVICE
FOR PUBLIC BUILDINGS

IN USE IN MUNICIPAL, COUNTY, STATE AND FEDERAL BUILDINGS THROUGHOUT THE COUNTRY, BEING EXPLICITLY AUTHORIZED BY THE POST OFFICE DEPARTMENT UNDER PROVISION OF A SPECIAL ACT OF CONGRESS. AS A PART OF THE POSTAL SYSTEM IT IS AVAILABLE FOR THE SERVICE OF SUCH PAPERS AS MAY BE LEGALLY SERVED THROUGH THE MAIIS.



WHERE THE STANDARD AUTHORIZED MAIL CHUTE EQUIPMENT IS DESIRED, THE CUTLER MAILING SYSTEM SHOULD BE SPECIFIED BY NAME.

DESIGNATE "MODEL C" IF THE VERY LATEST AND BEST FORM AS ILLUSTRATED HEREWITH IS REQUIRED. INTERIOR UNDER GOVERNMENT LOCK BUT INSTANTLY ACCESSIBLE TO AUTHORIZED PERSONS.

INSTALLED IN CONNECTION WITH THE U. S. FREE COLLECTION SERVICE ONLY BY THE SOLE MAKERS AND PATENTEES.

THE CUTLER MANUFACTURING CO.
GENERAL OFFICES, CUTLER BUILDINGS, ROCHESTER, N. Y.

HIGH GRADES OF
Natural Asphalt



The A. L. Barber Asphalt Co.

17 Battery Place, NEW YORK

SPECIAL NOTICE

In the respective following issues of the Municipal Journal and Engineer considerable space will be devoted specially to the subjects as indicated:

	—1906—
July 4th	- - - - - WATER
August 1st	- - - - - SANITATION —Smoke Prevention, Street Sprinkling and Cleaning.
September 5th	- - - - - THE CITY BEAUTIFUL —Parks, Monuments, etc.
October 3d	- - - - - FIRE AND POLICE
November 7th	- - - - - LIGHTING —Gas, Electricity, Etc.
December 5th	- - - - - BRIDGES

BOOKS YOU SHOULD HAVE

On Street and Road Construction, Sewer Systems, and Water Supply

CITY ROADS AND PAVEMENTS SUITED TO CITIES OF MODERATE SIZE.

Second edition, revised and enlarged.—By W. P. Judson. 200 pp. \$2.00.

STREET PAVEMENTS AND PAVING MATERIALS.

A Manual of City Pavements: the Methods and Materials of their Construction. For the Use of Students, Engineers, and City Officials. By Geo. W. Tillson, C. E. 8vo, xii + 532 pages, 60 figures. Cloth; \$4.00.

A TREATISE ON ROADS AND PAVEMENTS.

By Ira Osborn Baker, C. E. 8vo, viii + 655 pages, 171 figures, 68 tables. Cloth; \$5.00.

THE MODERN ASPHALT PAVEMENT.

By Clifford Richardson. 8vo, 580 pages. Cloth; \$3.00.

HIGHWAY CONSTRUCTION.

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Flatiron Building, Madison Square, New York

Volume XX. Number 23

June 6, 1906



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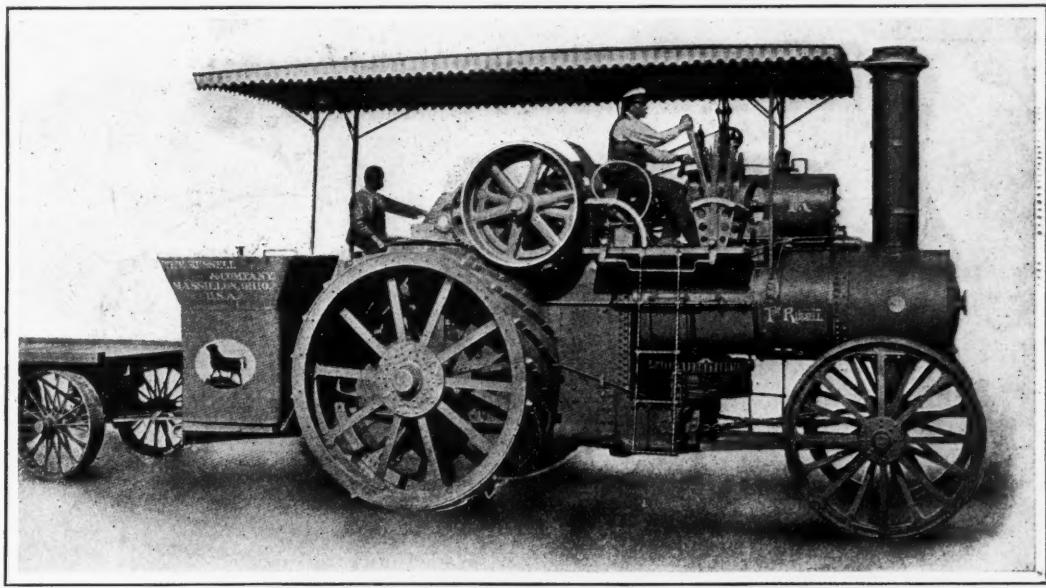
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REPAIR AND MAINTENANCE MACHINES
Stationary and Portable
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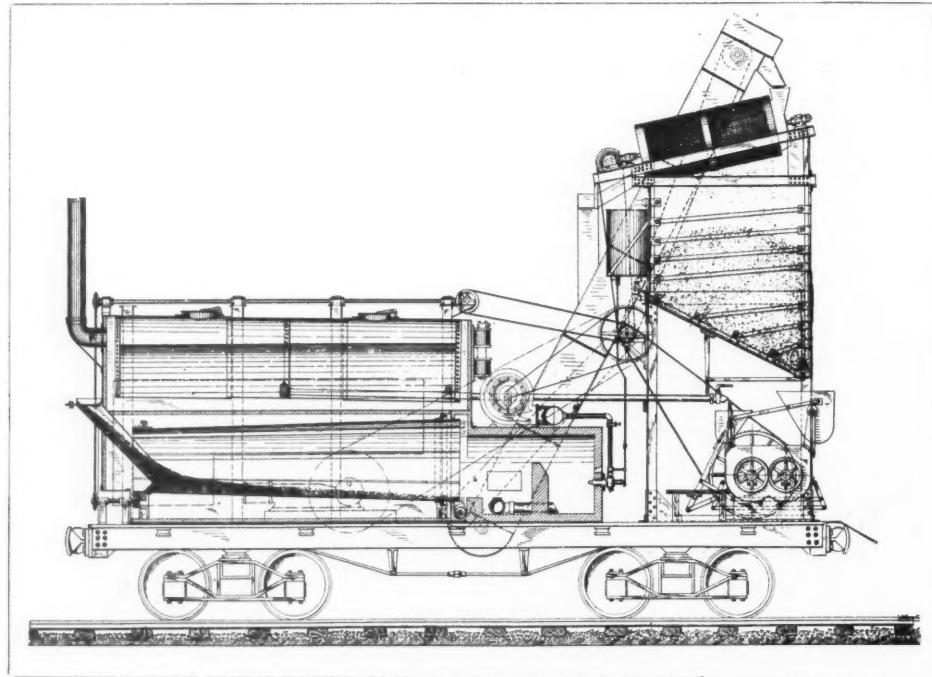
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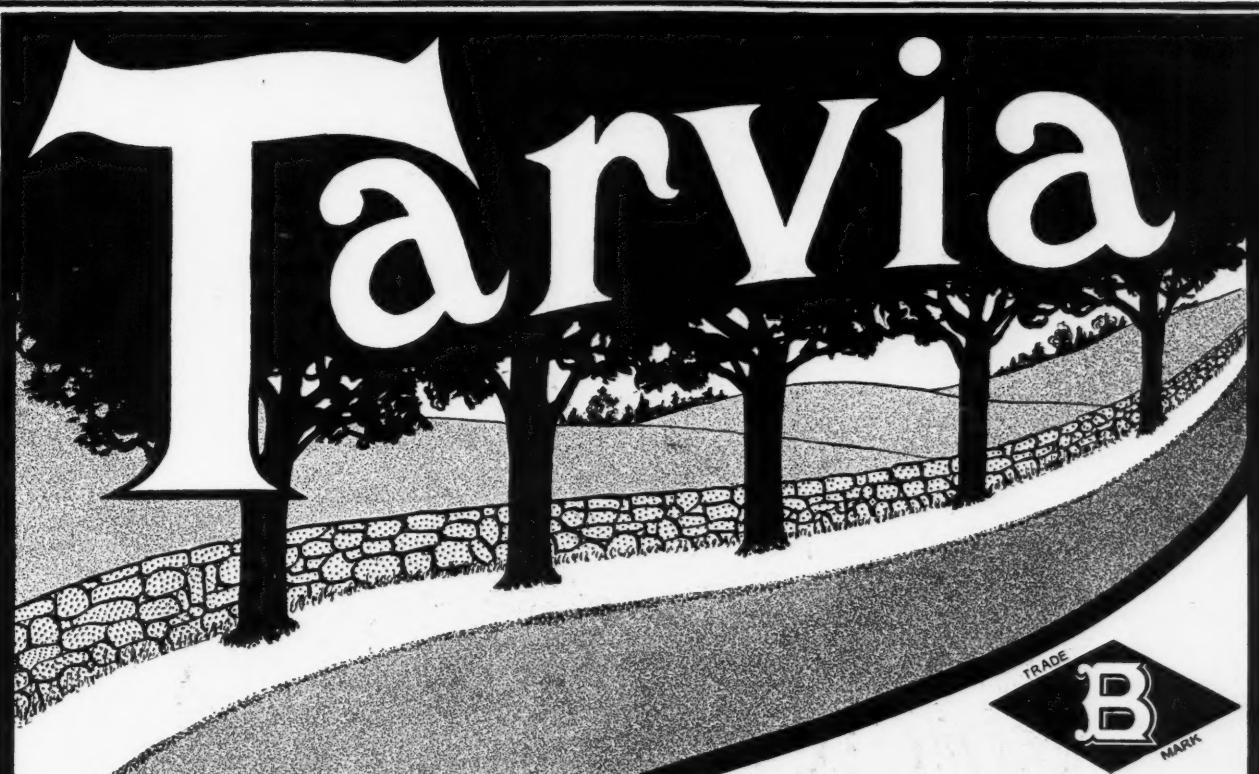
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Is the strongest binder for macadam, gravel and dirt roads.

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Makes these roads absolutely waterproof, airtight, dustless and mudless.

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Macadam will stand the heaviest traffic.

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Pays the cost of its application through saving in repairs.

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Applied by an ordinary water cart in 4 per cent. to 10 per cent. solution, 20 to 30 times a year, lays the dust on all kinds of pavement, 24 hours every day.

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The body being composed of refined natural asphalt and TRAP ROCK, subjected to a pressure of over 120 tons on each block, they are able to withstand both the grinding effect of traffic and the disintegrating effect of water and moisture, conditions under which all other forms of asphalt have shown a fatal weakness.

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Asphalt paving blocks are absolutely non-absorbent, thus preventing the absorption of noxious liquids and the subsequent giving off of disease germs.

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Trap Rock never polishes. It is in its nature gritty, and the joints in the blocks, coming every 5 inches, allow the calks of horses' shoes to catch and stop any incipient tendency to slip.

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These blocks can be taken up to enable repairs to be made to any sub-surface construction and relaid again in as good condition as before.

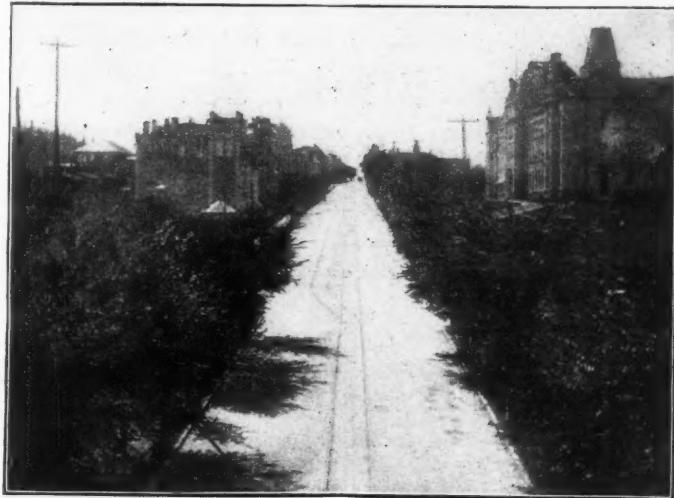
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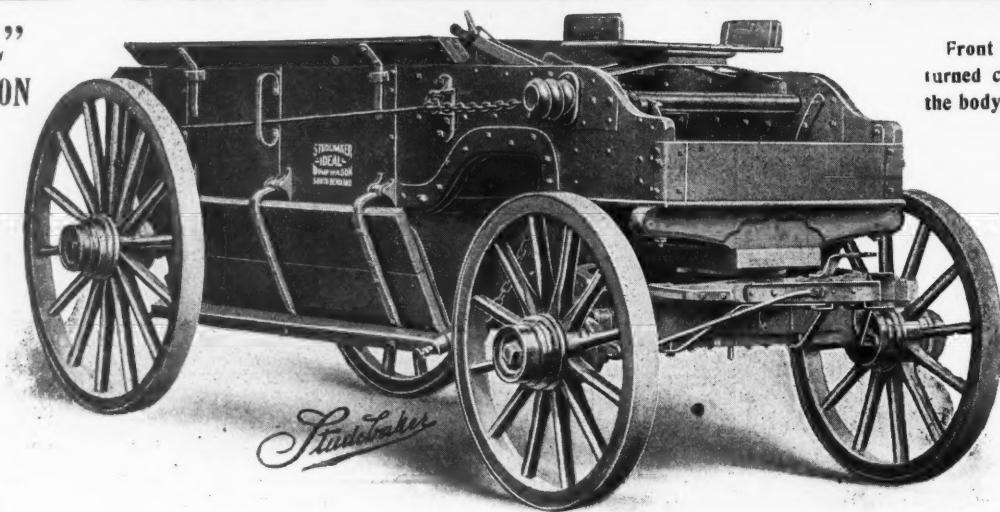
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Front wheels can be
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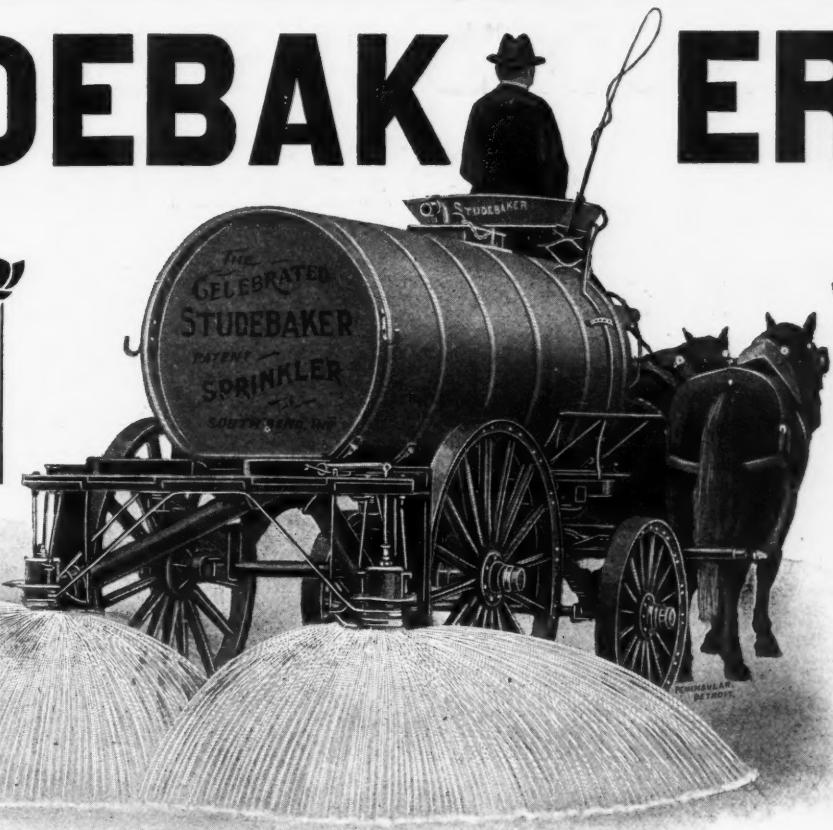
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Invaluable Features
Exclusively Our Own
Substantial Construction
Effective Results
Long Service



NIAGARA ATTACHMENTS. IN ACTION.

Over fifty years as manufacturers has given us invaluable experience in the construction of sprinkling wagons and enabled us to perfect them to meet every requirement. STUDEBAKER SPRINKLERS possess many features exclusively our own, viz.: our celebrated Patent Niagara Slot Valve, which cannot clog or rust or accumulate trash. Simplicity of construction and freedom from complicated parts—any boy can understand and operate them. Unequalled width and evenness of spray. All parts interchangeable. Easy draft and substantial construction combine to make STUDEBAKER SPRINKLERS the best that can be produced.

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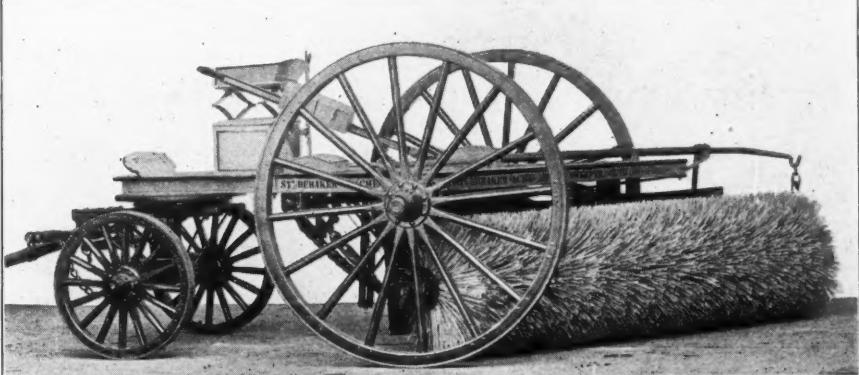
will wear longer with less repair because they are simple in construction and have the smallest possible number of working parts. No complicated gearing to get out of order and the construction and materials used are strictly first-class. We claim for our machine simplicity, efficiency, easy running, positive broom action, fewer working parts, consequently less friction than any other machine on the market.

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**Simplicity
Efficiency
Easy
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The Studebaker "Sweeps Clean"

**Fewer
Working
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A MODEL SYSTEM of STREET LIGHTING

¶ Is the result of using the mantle gas or naphtha lamp in connection with the electric arc. Street lighting experts agree upon this statement:

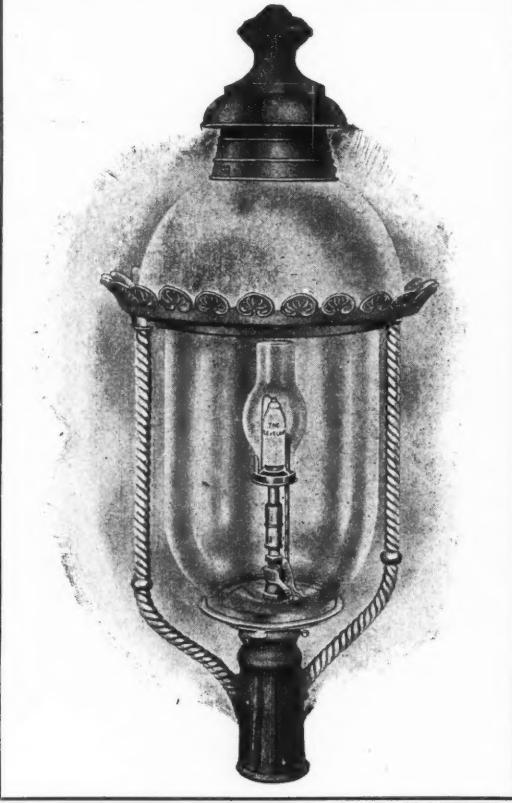
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It affords a better distribution of light.
It lights shaded streets perfectly.
It is the most economical any city can adopt.



THE CLEVELAND SYSTEM IS SUCCESSFUL

indicated by our being again awarded the contract with the City of St. Paul for 6,500 lamps. Minneapolis awarded us a contract for 3,500 lamps because of the success of our St. Paul contract. Pittsburg has contracted with us for 4,000 lamps. Some of the other cities using our lamps are Boston, Charleston, Memphis, Muscatine, Ia., Lincoln, Neb., Madison, Wis.



¶ Our Boulevard Gasoline Lamp makes it possible to obtain the same results as from the gas lamp where gas mains do not extend. We will guarantee any town or city a big saving in its lighting bills and a service that cannot be equaled. *Write us for particulars*

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CLEVELAND, OHIO

MINNEAPOLIS, 523 N. Y. Life Bldg. NEWPORT, R. I. ST. PAUL, 370 Jackson St. New York, 1 Broadway

CREOSOTED WOOD BLOCK AND KETTLE RIVER SANDSTONE PAVING

Anticipating the increasing demand for a properly treated wood block paving, we installed last year the most complete creosoting plant especially designed for paving blocks in the United States. This has a daily capacity of 3,000 square yards of 3½-inch blocks, a large acreage and ample facilities for storing and seasoning paving lumber, oil storage tanks of 500,000 gallons capacity, also a coal tar distilling plant for producing and redistilling creosote oil, so as to enable us to have constantly on hand the extra, heavy, rich oil that is essential to a permanent preservation of a wood block when exposed as it is in street work. We should be pleased to quote you on fir, tamarac, Norway or Southern pine creosoted blocks F. O. B. any point.

KETTLE RIVER SANDSTONE laid on a concrete base, with a cement filler, is the best pavement for grades and all heavy traffic. The grit in Kettle River Sandstone keeps the horses' shoes from slipping and prevents wear on the highest part of the block, so that the Kettle River stone pavement wears even and becomes smoother with use. On a well-traveled street it becomes in a comparatively short time as smooth as asphalt. It is fully as durable as granite, without being slippery, uneven or noisy.

Let us tell you about it.

Kettle River Quarries Co., Minneapolis, Minn.

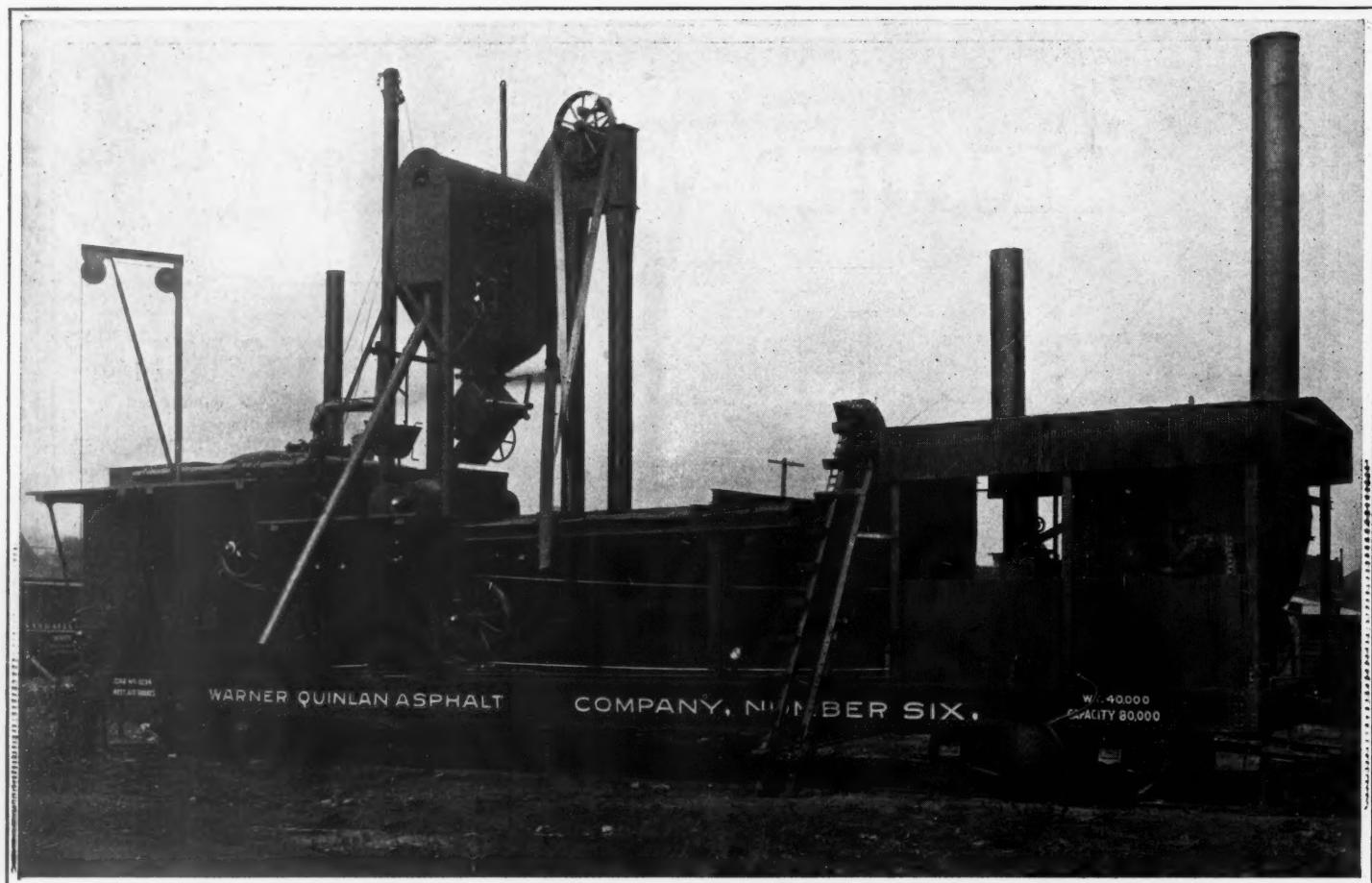
ST. PAUL, MINN.

GENTLEMEN:—Answering your inquiry I take great pleasure in stating that Kettle River sandstone has been used in St. Paul for paving very extensively. This class of pavement has given the City authorities and the citizens generally the very best satisfaction. Each class of pavement has its advantages and disadvantages, but taking everything into consideration, I am free to admit that Kettle River sandstone, as it has been laid in St. Paul, outclasses, without question, any other so-called permanent paving material, and if the citizens appreciate what is best for them they should insist on sandstone pavement in the majority of cases.

Yours very truly, (Signed) O. CLAUSSEN,

City Engineer and Com. of Public Works.

KETTLE RIVER QUARRIES COMPANY, MINNEAPOLIS, MINN.



THE HETHERINGTON ONE CAR RAILWAY ASPHALT PLANT

Patented MODEL OF 1906 Patented

Excellent Design

First-class Construction

The above illustration shows the very latest development in the art of plant building and embodies the experience of ten years work. The capacity of this outfit is 1,500 square yards per day, and it can be made ready to turn out material within two hours from time it is placed.

DO NOT WASTE YOUR SUBSTANCE BUYING EXPERIENCE FOR OTHERS
Our Plants Are Not Experiments; They Are Successes.

WE ALSO OFFER THE FOLLOWING LINE OF STATIONARY PLANTS

The Duplex	Stationary, All Steel	-	Capacity 4,000 Yards per Day
The Combination	" " "	"	3,250 " " "
The Municipal	" " "	"	2,000 " " "
The Semi-Portable	" " "	"	1,500 " " "
The Economic	Wood	-	1,100 " " "
The Repair Plant, Portable	Steel	-	800 " " "
The Two-Car Railway	"	-	2,000 " " "

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INDIANAPOLIS, INDIANA, U. S. A.



THE EAST OHIO SEWER PIPE COMPANY
SEWER PIPE AND OTHER CLAY PRODUCTS
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Double Strength Culvert Pipe

15 inches to 36 inches.

For Deep Sewers and Water Conduits.

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Standard Ohio Sewer Pipe

6 to 36 inches, with standard deep and wide
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Flue Linings **Wall Conduits**

PAVING BRICK

Fire Brick Fire Clay

ELECTRIC CONDUITS

and all other clay products.

**ANNUAL CAPACITY
5,000 CARLOADS**

Not necessary to procure a special design for each consumer

KEYSTONE WATER METERS

Are adapted to every requirement of water works service.
Can be installed on either HORIZONTAL or VERTICAL pipes.
Simple, accurate, durable and interchangeable.
Merely tell us your wants, and we'll "deliver the goods."

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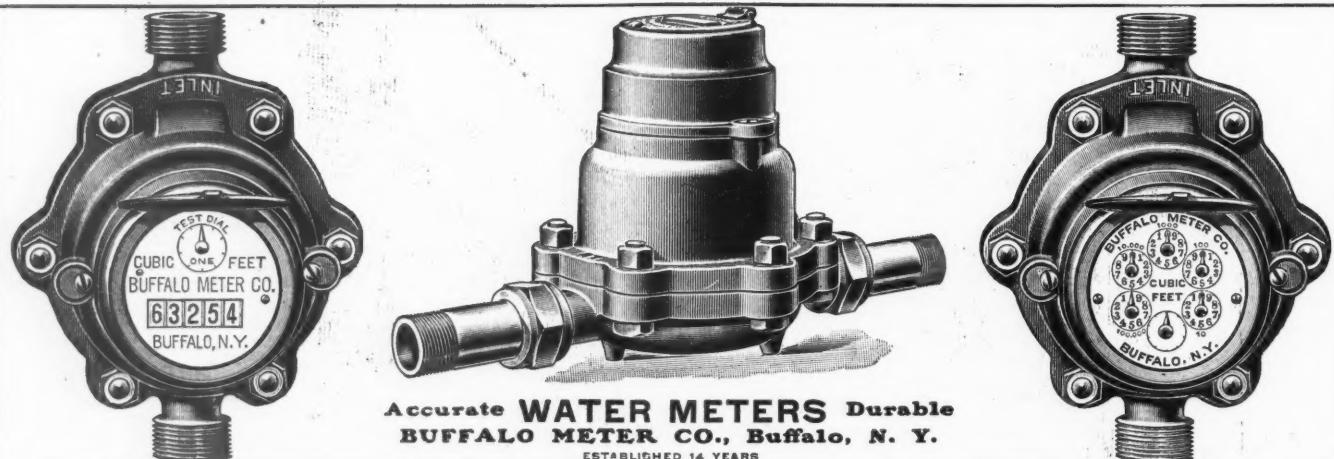


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THE KING VERTICAL

A Disk Meter for UPRIGHT SERVICE PIPES
which affords the simplest, most economical and
convenient meter setting for modern plumbing.

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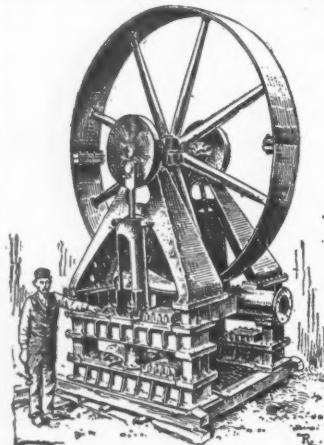


Water Supply at Lower Pumping Cost

BY USING THE BETHLEHEM POWER PUMP

100,000 to 3,000,000 gallons daily capacity. Specially designed to meet the needs of water work plants in smaller municipalities. Send for a copy of our booklet. Questions relative to special conditions or service receive careful attention.

Bethlehem Foundry & Machine Co. So. Bethlehem, Pa.



Watch for illustrated article on installation of Bethlehem Pump at Stapleton, S. I., in an early issue of Municipal Journal and Engineer.

Proposals**New Steam Roller**

Department of Public Works.
Rochester, N. Y., May 16, 1906.

Sealed bids will be received at this office until June 18, 1906, for a ten-ton steam roller, built by Aveling & Porter, Rochester, England. May be inspected by inquiring at this office. The Commissioner reserves the right to reject any or all bids.

FREDERICK T. ELWOOD,
Commissioner of Public Works.

Notice to Contractors

Notice is hereby given that plans and specifications of the proposed sewerage system, to cost about \$80,000.00, for the City of Bisbee, Arizona, are now open to inspection at the office of the City Clerk of said City. Copy of specifications will be mailed on request.

C. W. HICKS, City Clerk.

Drainage Canal

Wichita, Kansas, May 11, 1906.

Sealed bids will be received at this office for the construction of the Wichita Drainage Canal until 5 o'clock p. m., June 18, 1906. The approximate amount of the work covered by this contract is as follows:

Length, 3 84-100 miles.
Cubic Yards excavation, 286,032.

Average width on bottom, 23 1-2 feet.

Average cut, 9 3-4 feet.

Sides of cut to slope 1 1-2 to 1.

Dirt to be deposited on surface, leaving a 10-foot berm.

Clearing and grubbing to be included in price per cubic yard.

All work to be done according to plans and specifications of the City Engineer.

Bidders will be required to enclose a certified check, in the sum of \$5,000, payable to the city of Wichita, as a guarantee of good faith.

The Mayor and Council reserve the right to reject any and all bids.

R. N. DORR, City Clerk.

Garbage Disposal

Sealed proposals will be received by City Council (Crematory Committee) until June 20, at 7.30 p. m., for the collection and removal of garbage and for the disposal of garbage.

Bidders may submit proposals for the collection and removal of garbage for a single district or for the entire city or for the disposal of garbage or for the collection and disposal together. Copies of the specifications, proposal blanks and envelopes may be had at the office of the Clerk of Council. All proposals must be placed in the sealed envelopes provided for the purpose and must be deposited in the box in the Council chamber before 7.30 p. m. on date above specified (June 28).

The right to reject any or all bids is reserved. By order of The Council

JOHN J. MONAGHAN, Clerk of Council.
Wilmington, Del.

The Municipal Journal and Engineer should be on your library table as a constant current reference to all Municipal work.

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235 Johnson St., Chicago, Ill.

Manholes and Catchbasins

Curbs and Covers for cities, towns and villages. Covers for telephone and electric light conduits. Also manufacturers of power transmission machinery.

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Manufacturers of the famous

“CLINTON BLOCK”

For the Central Western States

Works and Office: - - CLINTON, IND.

THORNTON FIRE AND VITRIFIED PAVING BRICK CO.

Manufacturers of

Ground Fire Clay and Fire, Paving and Building Brick.

GRAFTON, WEST VIRGINIA.

High Grade Refined Asphalt The “Maltha Brand”

FOR PAVING AND ROOFING

PURE : DURABLE
RELIABLE:UNIFORM

Graded to Standard
Impervious to Water
Excels so-called
“natural” asphalts

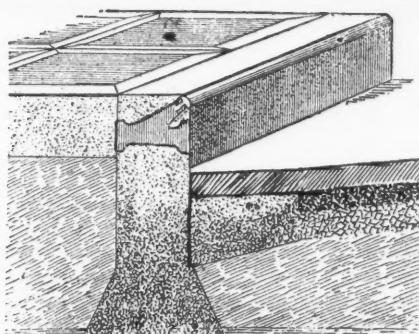
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SAN FRANCISCO

CHICAGO

NEW YORK

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Established in 1883

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150,000 feet of steel protected curb constructed in the Metropolitan District in 1905.

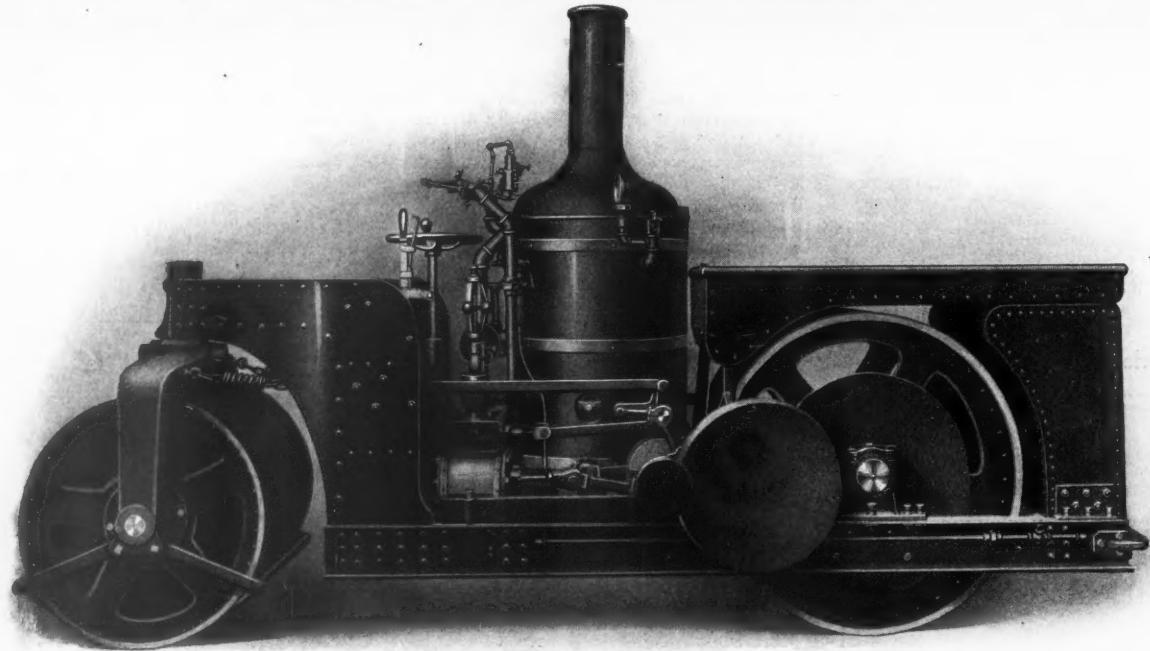
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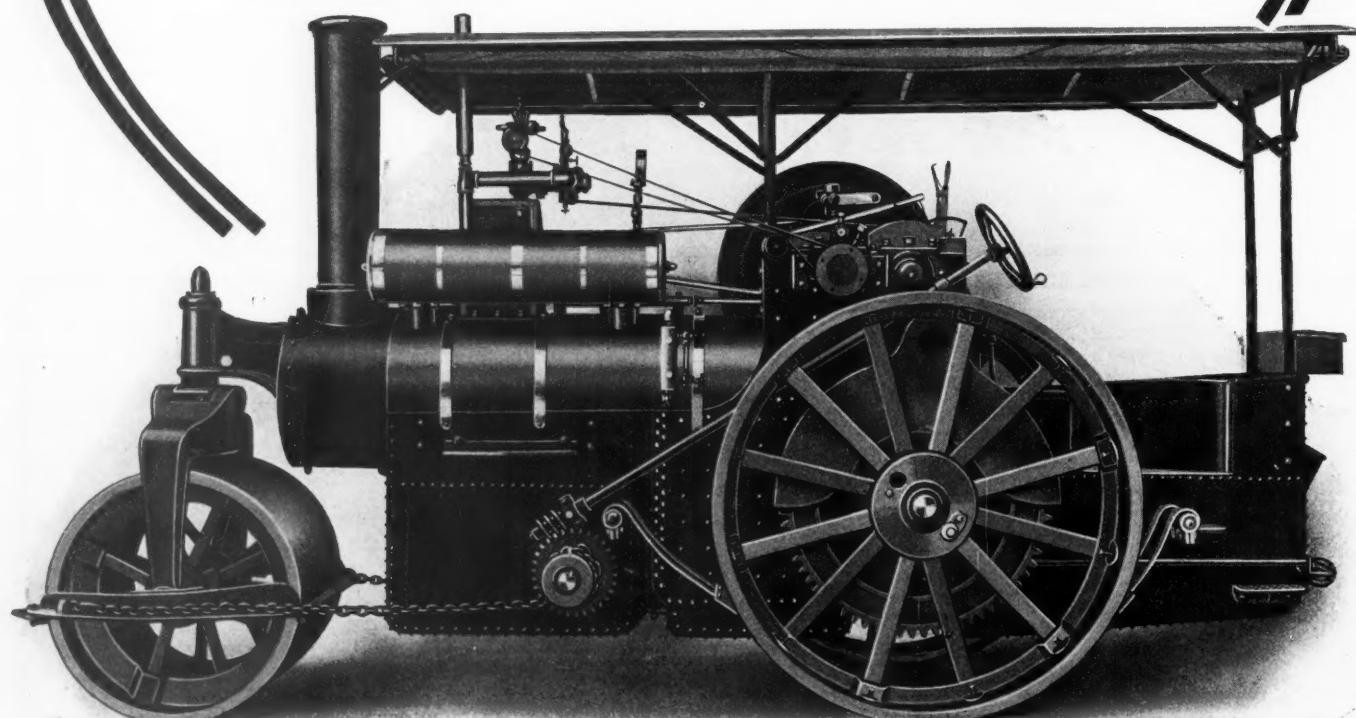
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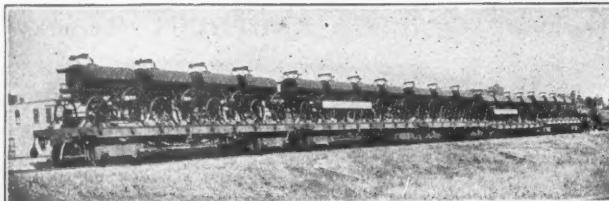
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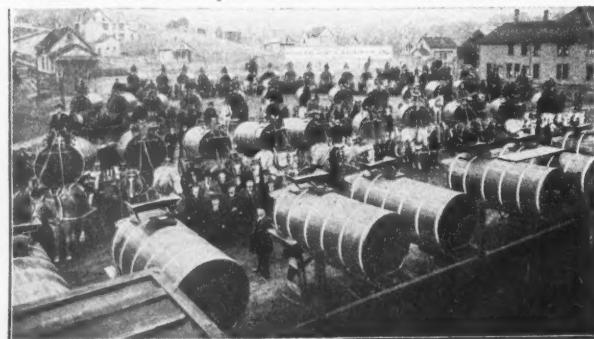
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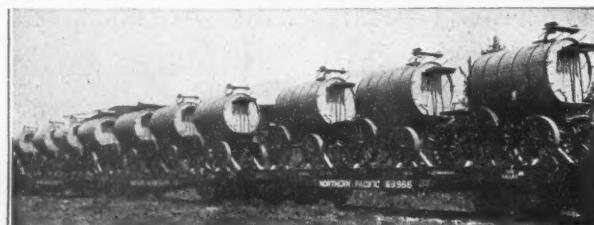
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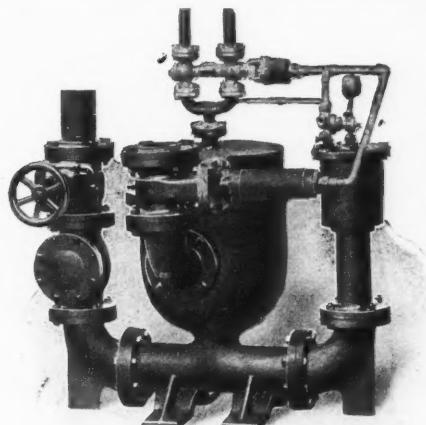
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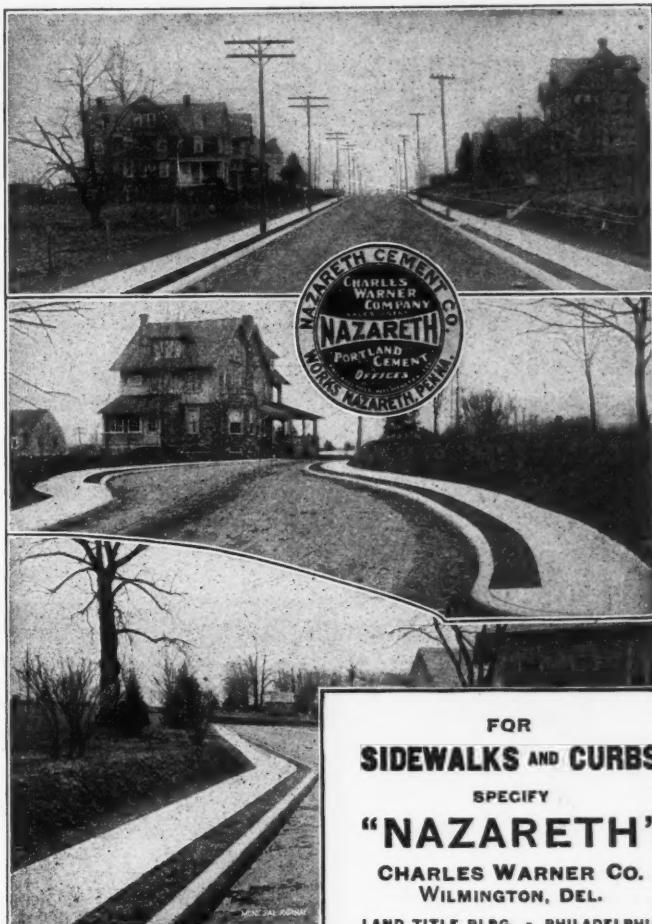
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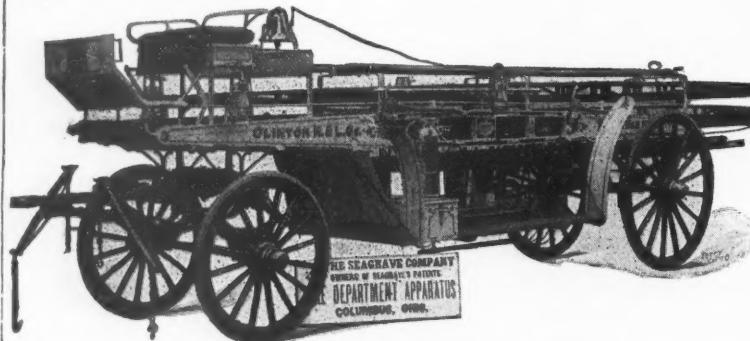
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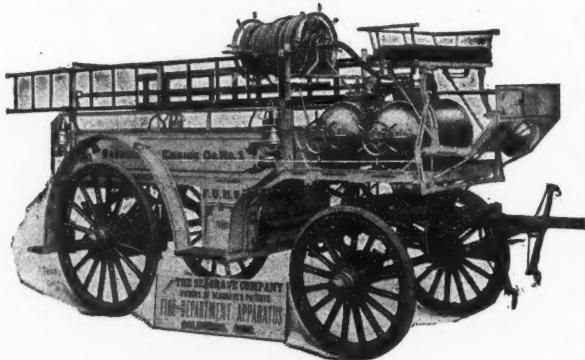
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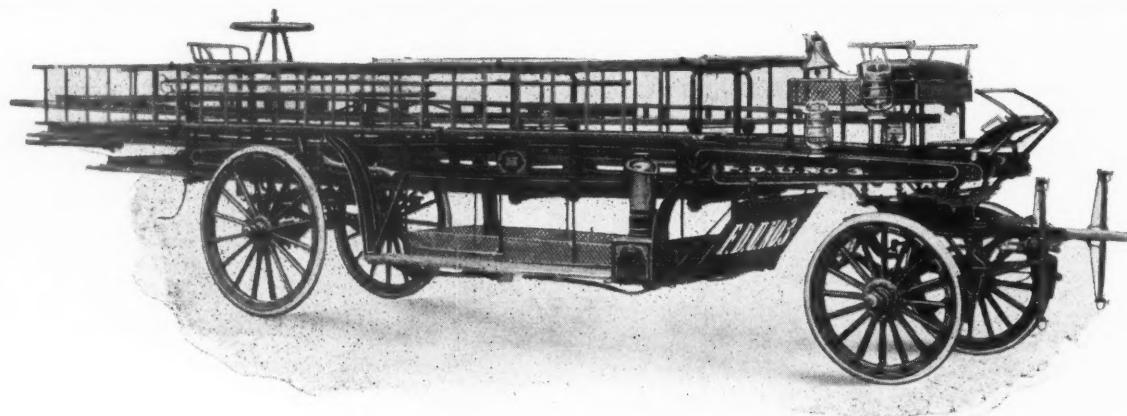
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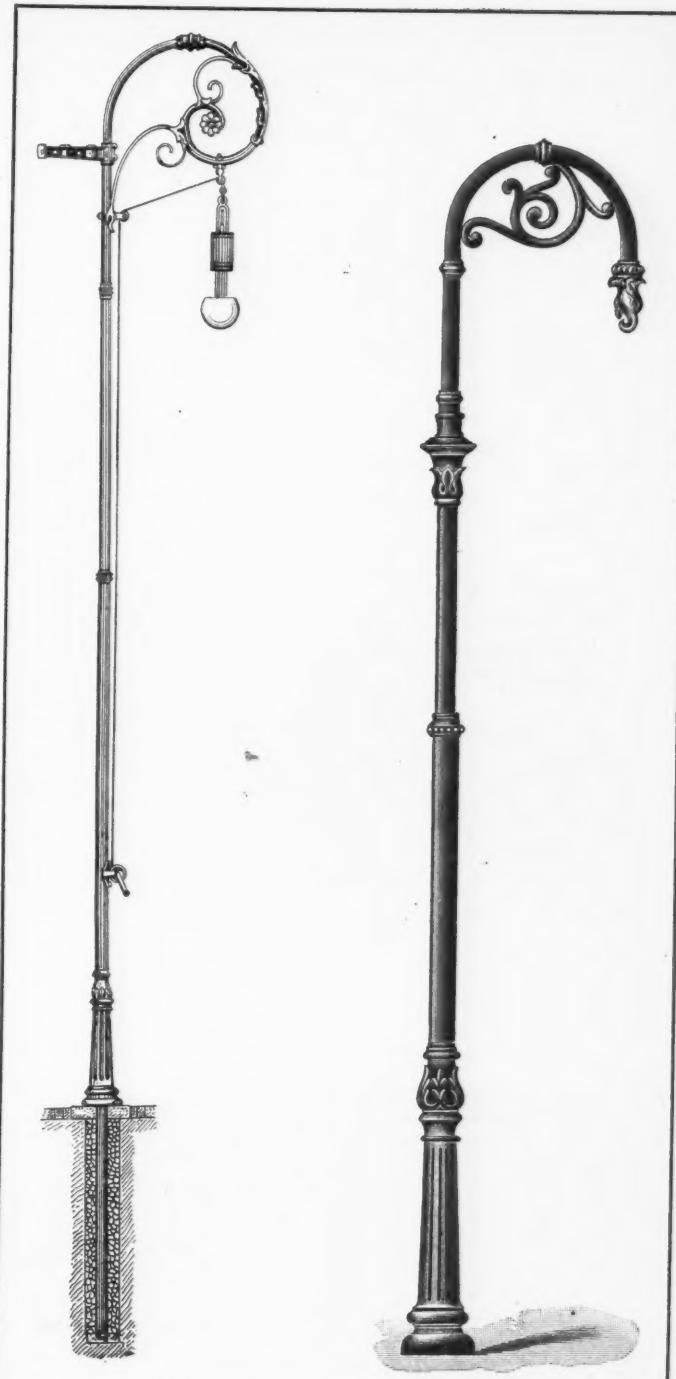
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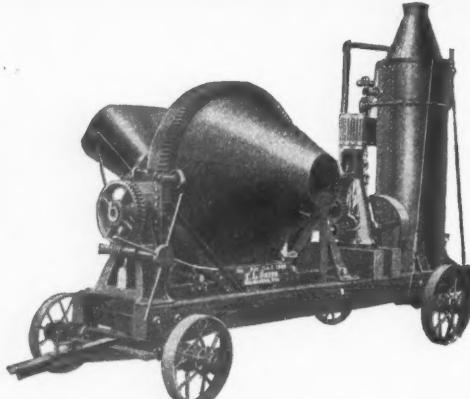
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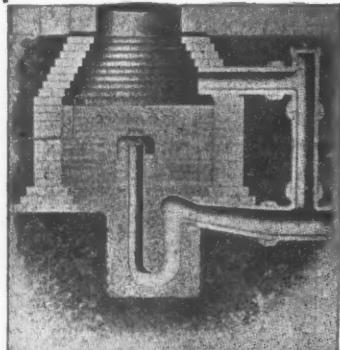
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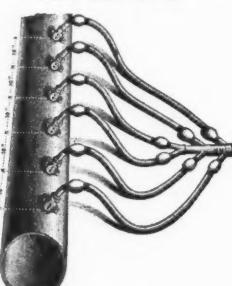
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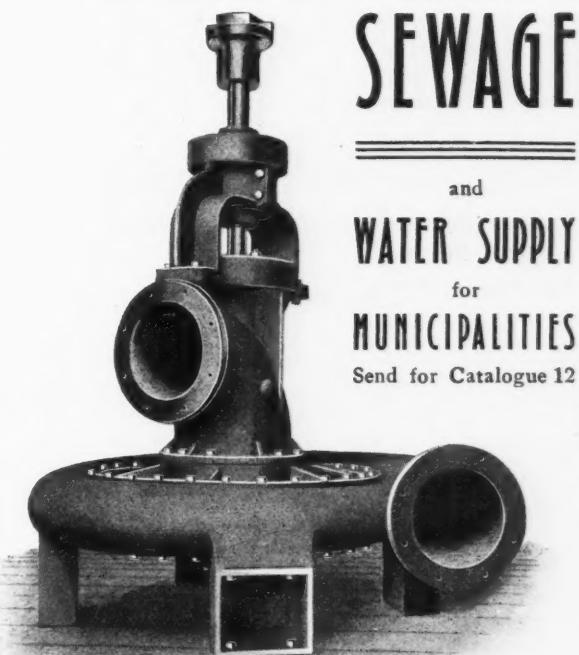
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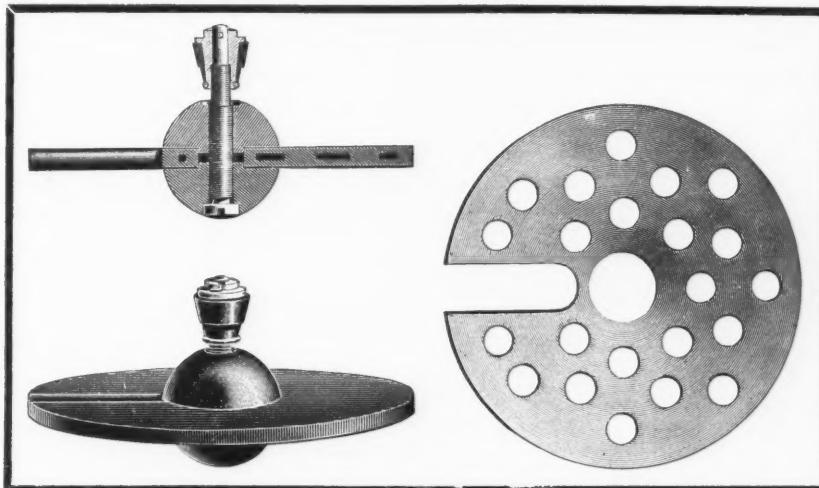
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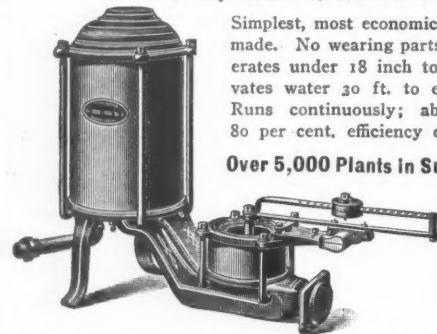
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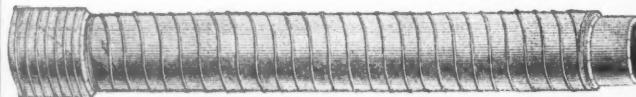
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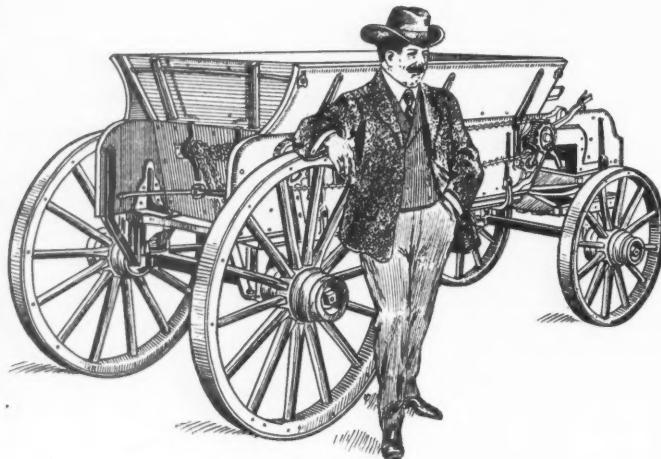
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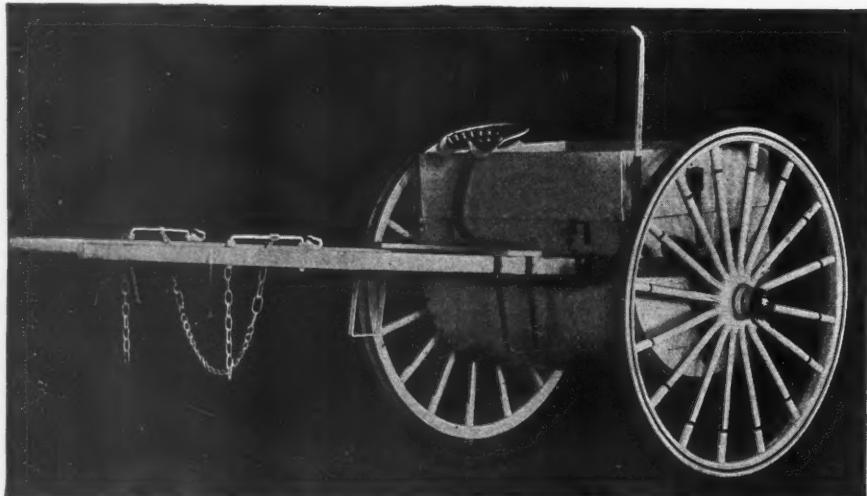
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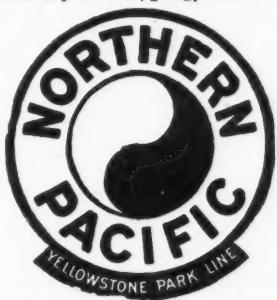
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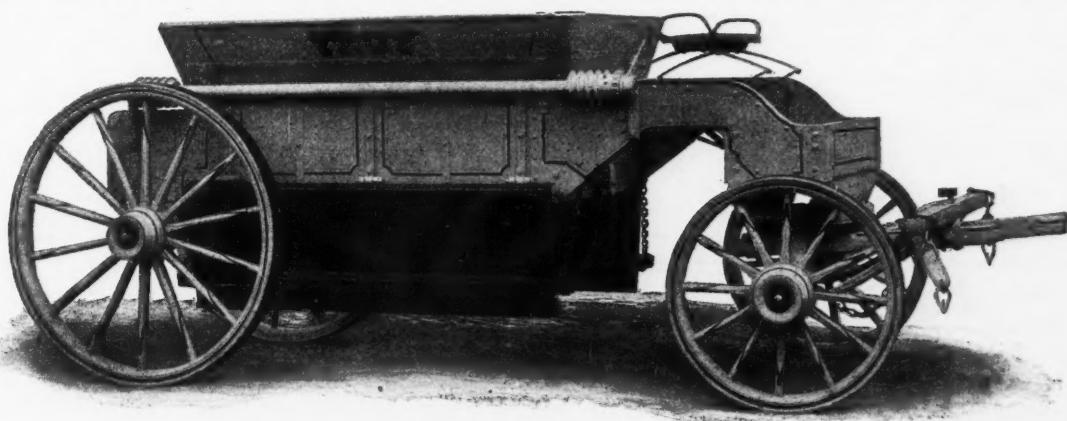
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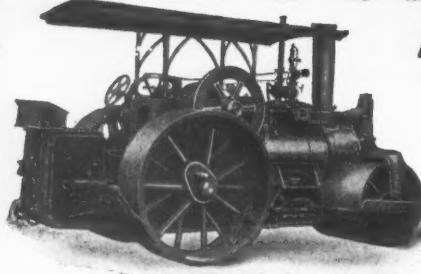
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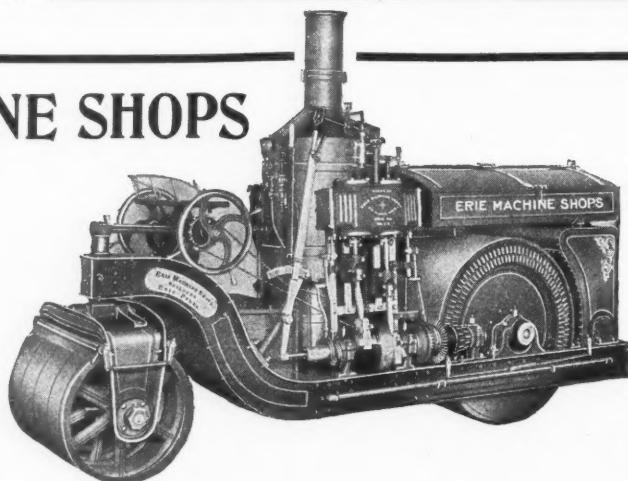
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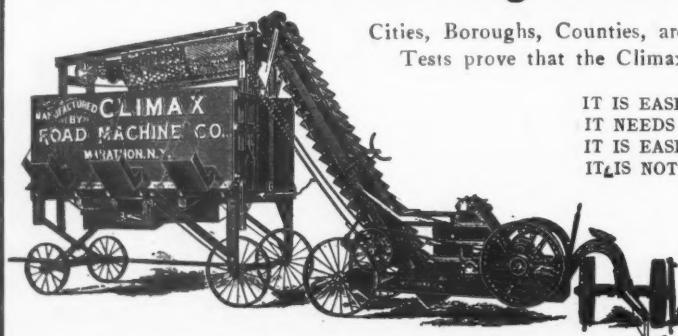
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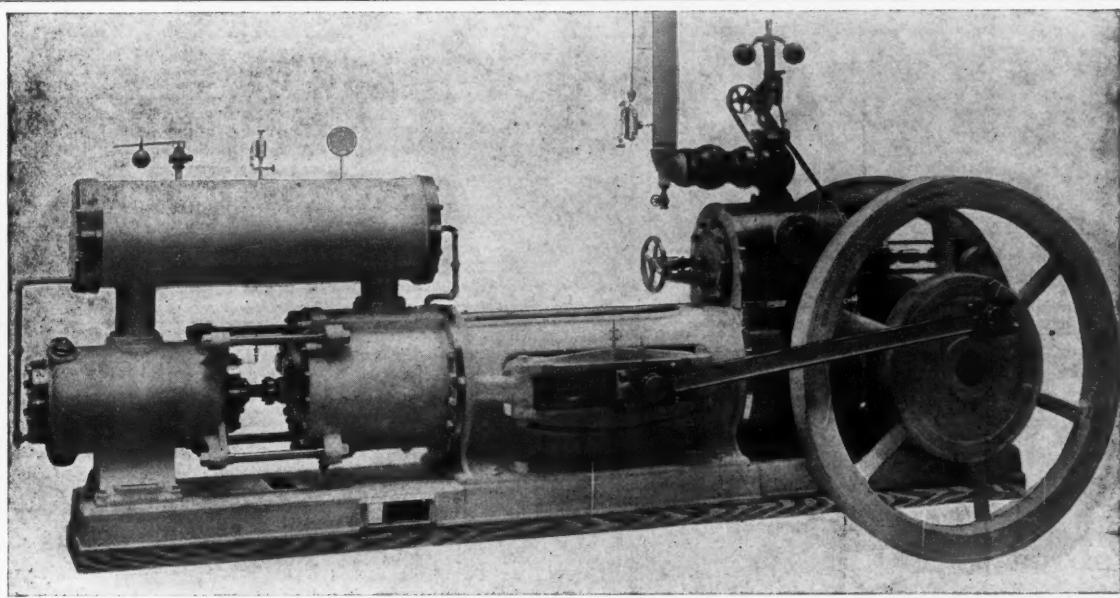


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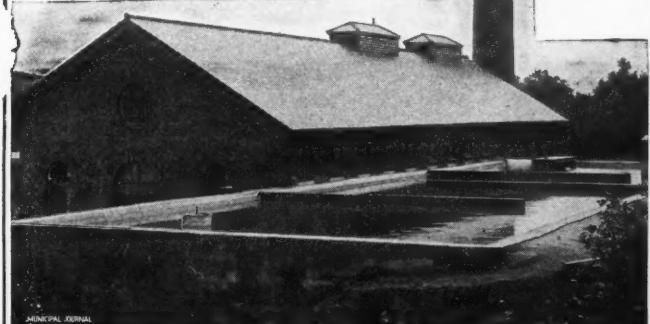
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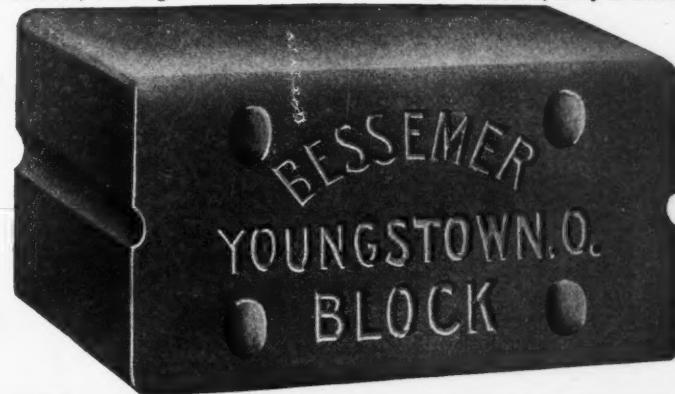
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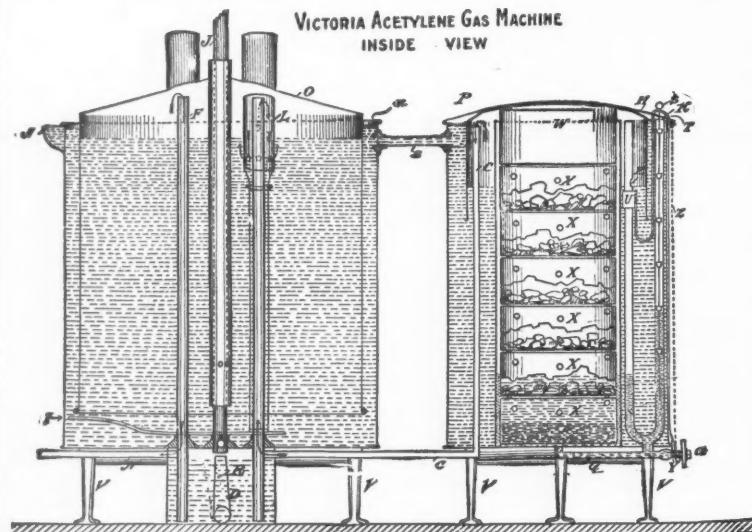
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THE ONE WITHOUT VALVES

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For Town Lighting it gives the most Gas for the Least Money, Results—DIVIDENDS



This Acetylene Generator has but one working part—a lever—and no valves to get out of order.

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See Descriptive Article in April Issue.



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IN USE IN MUNICIPAL, COUNTY, STATE AND FEDERAL BUILDINGS THROUGHOUT THE COUNTRY,

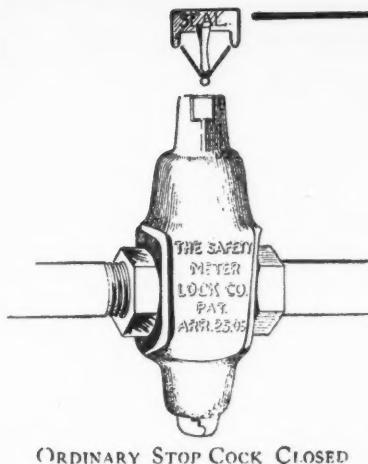
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DESIGNATE "MODEL C" IF THE VERY LATEST AND BEST FORM AS ILLUSTRATED HEREWITHE IS REQUIRED. INTERIOR UNDER GOVERNMENT LOCK BUT INSTANTLY ACCESSIBLE TO AUTHORIZED PERSONS.

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Seal Your Water and Gas Meters

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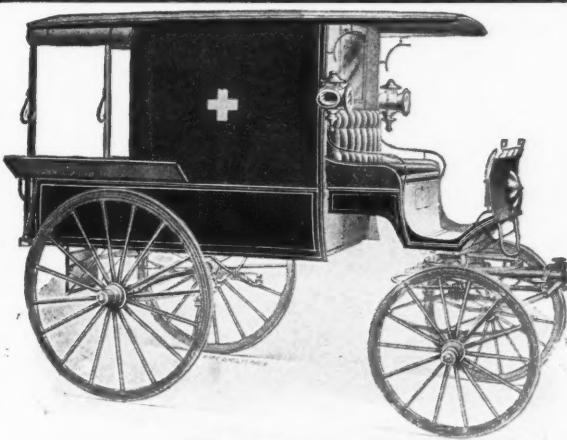
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Silencing the Street Noise of New York



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In announcing a resolution to pave the entire lower end of Manhattan Island with U. S. Wood Blocks, the Bureau of Highways of New York City has taken a step which has met with the universal approbation of the citizens of the city. Aside from the fact that practically all the streets in this district have been in a bad state of repair, the principal reason for this choice of pavement lies in the fact of its *silence under heavy traffic* and its *remarkable durability*.

In many places windows on the lower floors used to be kept tightly closed all summer long to keep out the noise which otherwise made conversation or transaction of business almost impossible. The plan of the city with the shipping district surrounding the office building district on three sides, made it impossible to divert the traffic and New Yorkers for years were compelled to grin and bear it. The relief from the street noise now afforded by the U. S. Wood Blocks has been complete and widely appreciated.

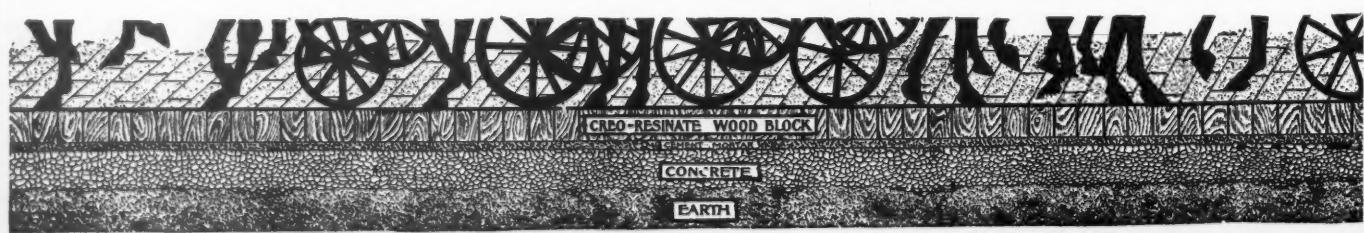
Asphalt has been tried, but under the heavy loads and constant sprinkling soon broke up and most of the streets of this character now remaining in lower New York City are melancholy ruins. The only other pavement in use was granite blocks which afforded fair foot-hold for horses, but was unbearably noisy.

Further advantages of the pavement are its ideal cleanliness, that it does not pulverize as asphalt does into fine dust, that it is not injured by the vibration of street car rails or the drippings of oil from the cars, it is easily removed and replaced for repairs to underground pipe or wire connections, and it affords excellent foot-hold for horses, despite the fact that its surface is smooth.

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THE Perfect Roadway IN CLASS BY ITSELF

“THE DEADLY PARALLEL”

The Asphalt Record

(From Report of General Asphalt Company, May 15, 1906.)

	Sq.Yds.
1878 to 1882, average area laid,	86,000
1905, Asphalt Pavement laid,	3,870,000
Increase in 23 years (1882-1905),	4,500%

The Bitulithic Record

	Sq.Yds.
Laid in 1901, -	16,400
Laid in 1902, -	440,831
Laid in 1903, -	915,630
Laid in 1904, -	940,239
Laid in 1905, -	1,091,825
Under contract June 1, 1906,	1,558,734

TOTAL BITULITHIC CONTRACTED FOR IN
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28 MILES OF ROADWAY 30 FEET WIDE IN
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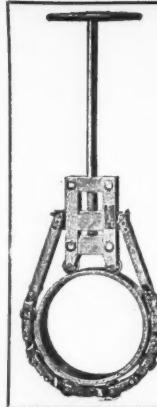
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